## **TDK-Lambda**

#### DRF480-24-1

#### **SPECIFICATIONS**

FA020-01-01D	PA620-01-01D	
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MODEL         DRF480-24-1           I Nominal Output Voltage         V         24           Maximum Output Current         A         20           Peak Output Current         65-100VAC/>10VAC/ °12,13)         A         257           Peak Output Fower         (K5-100VAC/>10VAC) °12,13)         W         600/720           Stands/ Imput Power (Typ) (230VAC)         (°14)         W         0.75           I Efficiency (Typ) (15/230VAC)         (°14)         W         0.725           I Input Voltage Range         (°22)         V         85 – 264VAC (47-63Hz)           I Input Current (Typ) (230VAC)         (°41)         A         4.7/2.5           I Input Current (Typ) (115/230VAC)         (°41)         A         4.7/2.5           I Input Current (Typ) (115/230VAC)         (°41)         A         4.7/2.5           I Input Current (Typ) (115/230VAC)         (°41)         A         2.40           I Input Voltage Range         V         2.42         2.40           I Input Current (Typ) (115/230VAC)         (°41)         A         2.40           I Input Current (Typ) (115/230VAC)         (°1)         0.98/10.92         V           I Porter Factor (Typ) (115/230VAC)         (°1)         0.98/10.92         V <t< th=""><th></th><th>PA620-01-01D</th><th></th><th></th></t<>		PA620-01-01D		
1         Nominal Output Voltage         V         24           Maximum Output Current         A         20           3         Peak Output Current         (85-100YAC/>-100YAC) (*12,13)         A         257/30           4         Maximum Output Power (797)         (230YAC) (*12,13)         W         600/750           5         Stands/ Input Power (797)         (230YAC) (*14)         W         0.75           7         Efficiency (Typ)         (230YAC) (*14)         W         0.75           9         Input Voltage Range         (*2)         W         85 ~ 264VAC (47-63Hz)           10         Input Current (Typ)         (115/230VAC)         (*1)         A         4.77.2.5           11         Insuds Current (Typ)         (115/230VAC)         (*1)         A         20           12         PPHC         -         Designed To Meet IEC61000-3.2         -           13         Dower Factor (Typ)         (115/230VAC)         (*1)         N         240           14         Dutput Voltage Range         V         24-28         -         -           14         Dutput Voltage Range         (*1)         N         240         -           15         Ronte Asoise         (*1) <td></td> <td>MODEL</td> <td></td> <td>DRF480-24-1</td>		MODEL		DRF480-24-1
2         Maximum Output Current         A         20           2         Beak Cutor Current         257.30           4         Maximum Output Power         480           5         Peak Cutor Power         75.30           6         Biandby Input Power         75.30           7         Base Cutor Power         75.30           8         Average Active Efficiency (Typ)         72.30VAC)         (*14)           9         Input Voltage Range         (*2)         W           9         Input Voltage Range         (*2)         W           10         Intrust Active Efficiency (Typ) (12520VAC)         (*1)         (*1)           10         Intrust Active Ifficiency (Typ) (230VAC)         (*1)         (*3)         20           11         Itanash Current (Typ) (115/230VAC)         (*1)         0.987/092         10           12         PPHC         10         0.987/092         10         10           13         Romer Exetor (Typ) (115/230VAC)         (*1)         10         0.987/092           14         Diput Voltage Range         V         240         240           14         Indel & Koist         (*1)         10         240           15	1		V	24
3         Peak Outpot Current (85-100VAC/>100VAC/ (*12,13) M         25/30           4         Maximum Output Power (NP)         23-100VAC/>2400VAC/ (*12,13) W         660/720           5         Standby Input Power (Typ) (230VAC)         (*1) %         92,554           8         Average Active Efficiency (Typ) (230VAC)         %         92,55           9         Input Voltage Range         (*2)         V         85 ~ 264VAC (47-63Hz)           10         Input Current (Typ) (115/230VAC)         (*1)         A         47.72.5           11         Imush Current (Typ) (115/230VAC)         (*1)         A         47.72.5           11         Imush Current (Typ) (115/230VAC)         (*1)         -         0.0887 (0.52)           12         PFHC         -         Designed To Meet IEC61000-3-2         -           13         Power Factor (Typ) (115/230VAC)         (*1)         -         0.0887 (0.52)           14         Output Voitage Range         (*1)         -         0.0887 (0.52)           14         Output Voitage Range         (*1)         -         0.0887 (0.52)           14         Output Voitage Range         (*1)         -         240           15         Rohe Contont         (*5)         NT         - </td <td></td> <td></td> <td></td> <td></td>				
4         Maximum Output Power         W         480           6         Standby Input Power (Typ)         (320VAC)         (*14)         W         60/720           6         Standby Input Power (Typ)         (320VAC)         (*14)         W         60/720           7         Efficiency (Typ)         (1320VAC)         (*1)         %         92,57           9         Input Voltage Range         (*2)         Withstand 300/ACS surge for 5 seconds)           10         Input Current (Typ)         (115/230VAC)         (*1)         A         47/2.5           11         Insuch Current (Typ)         (115/230VAC)         (*1)         A         47/2.5           12         PEHC         -         Designed To Meet IEC61000-3-2         -           13         Power Factor (Typ)         (115/230VAC)         (*1)         -         0.987/092           14         Outgut Voltage Range         V         240         -         -           14         Dower Factor (Typ)         (115/230VAC)         (*1)         N         240           15         Load Regulation         (*5,0)         N         240         -           16         Line Regulation         (*5,1)         N         240		Darla Output Current (95, 100MAC) (*12,12)		
Speak Ourput Power         (§5-100 VAC / > 100 VAC / (*1) W         600 / 720           6         Standby Input Power (Tryp)         (230 VAC)         (*1) W         0.75           7         Efficiency (Tryp)         (115/230 VAC)         (*)         92.5           8         Average Active Efficiency (Tryp)         (230 VAC)         (*)         92.5           9         Input Voltage Range         (*2)         (Withstand 300 VAC Surge for 5 seconds)           10         Input Current (Tryp)         (230 VAC)         (*)         A           11         Inrush Current (Tryp)         (230 VAC)         (*)         A         -20           12         PEHC         -         Designed To Meet IEC61000-3-2         -         -           13         Power Factor (Tryp)         (115/230 VAC)         (*1)         -         0.98/ 0.92           14         Output Voltage Range         V         24-28         -         -           16         Unex graduation         (*5,5) mV         96         -         -         -           17         Load Regulation         (*5,5) mV         90         -         -         -         -         -         -         -         -         -         -         - </td <td></td> <td></td> <td></td> <td></td>				
6       Standby Input Power (Typ) (1230VAC)       (*14) W       0.75         7       Efficiency (Typ) (12320VAC)       *9       92.5         9       Input Voltage Range       (*2) V $85 - 264VAC (47.63Hz)$ 10       Input Current (Typ) (115/230VAC)       (*1) A $4.7/2.5$ 11       Inrusk Current (Typ) (115/230VAC)       (*1) A $4.7/2.5$ 12       IPHC       -       Designed To Meet IEC61000-3-2         13       Power Factor (Typ) (115/230VAC)       (*1) A $24.72.5$ 14       Output Voltage Range       V $24.42.8$ 15       Ripple & Noise       (*1,4) mV       240         16       Line Regulation       (*5,5) mV       240         17       Load Regulation       (*5,5) mV       240         18       Temperature Coefficient       -       Less than 0.02% / *C         19       Ower Voltage Protection       (*9) V       30-35.5       21         21       Hoid-up Tenerthy       (*10) -       <				
7       Efficiency (Typ) (115/230VAC)       (*)       %       92.5         9       Input Voltage Range       (*2)       V $85 - 524VAC (47-63Hz)$ 10       Input Current (Typ) (115/230VAC)       (*)       A $4.7/2.5$ 11       Inrush Current (Typ) (115/230VAC)       (*)       A $4.7/2.5$ 11       Inrush Current (Typ) (115/230VAC)       (*)       A $20$ 12       PFHC       -       Designed To Meet IEC61000-3-2       -         13       Power Factor (Typ) (115/230VAC)       (*)       -       0.98/0.92       -         14       Output Voltage Range       V $24.28$ -       -         14       Output Voltage Range       V $24.28$ -       -         15       Ripple & Noise       (*), M       96       -       -         16       Line Regulation       (*5, O) MV       96       -       -       -         18       Temperature Coefficient       -       Less than 0.02% / *C       -       -       -         19       Over Current Protection       (*9)       V       30-35.5       -       -       -       -       -       -	3	Peak Output Power $(83 \sim 100 \text{ VAC} / > 100 \text{ VAC})$ (*12,13)		
8       Average Active Efficiency (Typ) (230VAC)       %       92.5         9       Input Voltage Range       (*2)       V       85 ~ 264VAC (47-63Hz)         10       Input Current (Typ) (15/230VAC)       (*1)       A       4.7 (2.5)         11       Inrash Current (Typ) (230VAC)       (*1)       A       4.7 (2.5)         12       PPHC       -       0.98 / 0.92       -         13       Power Factor (Typ) (115/230VAC)       (*1)       -       0.98 / 0.92         14       Output Voltage Range       V       24-28       -         15       Ripple & Noise       (*1,4)       mV       240         16       Line Regulation       (*5,5)       mV       240         17       Load Regulation       (*5,5)       mV       240         19       Over Current Protection       (*8)       Constant current finit with auto recovery/Latch         20       Over Voltage Protection       (*9)       V       30-35.5         21       Hold-up frame (Typ)       (*1)       -       -         22       Remote Sensing       -       -       -         23       Remote Sensing       -       -       Possible       -       - <td></td> <td>Standby Input Power (Typ) (230VAC) (*14) <math>\sum_{n=1}^{\infty} \frac{115}{220} \frac{115}{220</math></td> <td></td> <td></td>		Standby Input Power (Typ) (230VAC) (*14) $\sum_{n=1}^{\infty} \frac{115}{220} \frac{115}{220$		
9         Input Voltage Range         (*2)         V         85 > 264VAC (47-63Hz) (Withstand 300VAC Surge for 5 seconds)           10         Input Current (Typ) (115/230VAC)         (*1)         A         47.7.2.5           11         Inrash Current (Typ) (230VAC)         (*1)         A         2.0           12         PFHC         -         Designed To Meet IEC61000-3-2         0.98 / 0.92           14         Output Voltage Range         V         2.4-28         0.98 / 0.92           14         Output Voltage Range         V         2.4-28         0.98 / 0.92           15         Ripple & Noise         (*1,4) mV         2.40         1.0           16         Line Regulation         (*5,6) mV         96         1.0           17         Load Regulation         (*5,6) mV         96         1.0           18         Temperature Coefficient         -         Less than 0.02% / °C         1.0           20         Over Voltage Protection         (*1)         .0         2.0         State 2.0           21         Hold-up Time (Typ)         (*1)         .0         .0         2.0           23         Paroide Oxiteret Coefficient         -         .0         .0           24 <td< td=""><td></td><td><math display="block">\frac{\text{Efficiency (1yp)} (115/230VAC)}{(^{+}1)}</math></td><td></td><td>92.3/94</td></td<>		$\frac{\text{Efficiency (1yp)} (115/230VAC)}{(^{+}1)}$		92.3/94
The formed maps         (Withstand 300VAC Surge for 5 seconds)           Iol Input Current (Typ) (230VAC)         (*1) A         4.7/2.5           11 Inrush Current (Typ) (230VAC)         (*1) A         20           12 PFHC         -         0.98 (0.92           13 Power Factor (Tvp) (115/230VAC)         (*1) -         0.98 (0.92           14 Output Voltage Range         V         24-28           15 Ripple & Noise         (*1,4) m/         240           16 Line Regulation         (*5,0) m/         96           17 Load Regulation         (*5,0) m/         240           18 Temperature Coefficient         -         Less than 0.02% /*C           19 Over Current Protection         (*8) -         Constant current limit with auto recover/Latch           20 Over Voltage Protection         (*9) V         30-35.5         21           21 Leakage Current         (*10) - <imat 240vac<="" td="">         23           22 Leakage Current         (*10) -         <imat 240vac<="" td="">         24           23 Remote Sensing         -         -         Possible (Active Low)           24 Remote ON/OFF control         -         Possible (Active Low)           25 Series Operation         -         Possible (Active Low)           26 Series Operating Temperature<td>8</td><td></td><td></td><td></td></imat></imat>	8			
10       Input Current (Typ) (115/230VAC)       (*1)       A       4.7/2.5         11       Inrush Current (Typ) (230VAC)       (*3)       A       20         12       PFHC       -       0.98/0.92       -         13       Power Factor (Typ) (115/230VAC)       (*1)       -       0.98/0.92         14       Output Voltage Range       V       24-28         15       Ripple & Noise       (*1,4) mV       240         16       Line Regulation       (*5,5) mV       96         17       Load Regulation       (*5,7) mV       240         18       Temperature Coefficient       -       Less than 0.02% /*C         19       Over Voltage Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*9)       V       30-35.5       -         21       Hold-up Time (Typ)       (*10)       -       -       -         22       Remote Sensing       -       -       -       -         23       Remote Sensing       -       -       Possible       -       -         24       Remote Sensing       -       Decating Temperature       -       Decating Linu	9	Input Voltage Range (*2)	v	
11       Inrush Current (Typ) (230VAC)       (*1)       .       Designed To Meet IEC61000-3-2         12       PFHC       .       0.98 / 0.92         13       Power Factor (Typ) (115/230VAC)       (*1)       .       0.98 / 0.92         14       Output Voltage Range       V       24-28         15       Ripple & Noise       (*1.4) mV       240         16       Line Regulation       (*5.5) mV       240         17       Load Regulation       (*5.7) mV       240         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Current Protection       (*8)       Constant current limi with auto recoveryLatch         20       Over Voltage Protection       (*9)       V       30-35.5         21       Hold-up Time (Typ)       (*1) ms       14         22       Leakage Current       (*10) - <ima 240vac<="" at="" td="">         24       Remote ON/OFF control       -       De OK Relay, DC OK LED, Peak LED         25       Storage Temperature       (*11,16) -       -       25 ~ 660°C: 100%, +70°C : 75%         26       Series Operation       -       Possible       26         27       Parallel Operation       -       -<td>10</td><td>L</td><td></td><td></td></ima>	10	L		
12       PFHC       -       Designed To Meet IECG1000-3-2         13       Power Factor (Typ) (115/230VAC)       (*)       -       0.987 / 0.92         14       Output Voltage Range       V       24-28         15       Ripple & Noise       (*1,4) mV       240         16       Line Regulation       (*5,6) mV       96         17       Load Regulation       (*5,7) mV       240         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Current Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*9)       V       30-35.5       -         21       Hold-up Time (Typ)       (*1) ms       14       -         22       Leakage Current       (*10) - <mmmaxit 240vac<="" td="">         23       Remote Sensing       -       -       -         24       Remote ON/OFF control       -       Decox K Relay, DC OK LED, Peak LED         25       Monitoring Signal       -       DC OK Relay, DC OK LED, Peak LED         26       Series Operation       -       -       25~95% RH (No dewdrop)         20       Operating Temperature       <td< td=""><td></td><td>Input Current (Typ) (115/230VAC) (*1)</td><td></td><td>, ===</td></td<></mmmaxit>		Input Current (Typ) (115/230VAC) (*1)		, ===
13       Power Factor (Typ) (115/230VAC)       (*1)       -       0.987 (0.92         14       Output Voltage Range       V       24-28         15       Ripple & Noise       (*1,4) mV       240         16       Line Regulation       (*5,6) mV       96         17       Load Regulation       (*5,7) mV       240         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Current Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*8)       -       Indidup Time (Typ)       21         21       Leakage Current       (*10)       <	11	Inrush Current (Typ) (230VAC) (*3)	Α	
14       Output Voltage Range       V       24-28         15       Ripple & Noise       (*1,4)       mV       240         16       Line Regulation       (*5,6)       mV       96         17       Load Regulation       (*5,6)       mV       96         18       Temperature Coefficient       -       Less than 0.02% / °C         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Current Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*9)       30-35.5       -         21       Hold-up Time (Typ)       (*1)       ms       14         22       Leakage Current       (*10) -       <	12	PFHC	-	
15       Ripple & Noise       (*1,4) mV       240         16       Line Regulation       (*5,6) mV       96         17       Load Regulation       (*5,7) mV       240         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Current Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*9)       V       30-35.5       21         21       Hold-up Time (Typ)       (*1)       n       14         22       Leakage Current       (*10) -       <	13	Power Factor (Typ) (115/230VAC) (*1)	-	
16       Line Regulation       (*5.6) mV       96         17       Load Regulation       (*5.7) mV       240         18       Temperature Coefficient       -       Less than 0.02% / °C         19       Over Voltage Protection       (*8)       -       Constant current limit with auto recovery/Latch         20       Over Voltage Protection       (*9)       V       30-35.5         21       Hold-up Time (Typ)       (*1) ms       14         22       Leakage Current       (*10) -       < InA at 240VAC				
17Load Regulation(*5,7) mV24018Temperature Coefficient-Less than 0.02% / °C19Over Current Protection(*8)-20Over Voltage Protection(*9)V21Hold-up Time (Typ)(*1)21Hold-up Time (Typ)(*1)23Remote Sensing-24Remote Sensing-24Remote NO/OFF control-25Monitoring Signal-26Series Operation-27Parallel Operation-28Operating Temperature(*11,16)29Operating Humidity-20Operating Humidity-27Storage Temperature(*11,16)29Operating Humidity-20Storage Temperature-20Operating Humidity-21Storage Temperature-22Cooling-23Kithstand Voltage-24Input - Gutput : 4242VDC (20mA), Input - FG : 2121VDC (20mA)20Operating It inmidity-23Storage Humidity-24Storage Humidity-25Operating It inmidity-26-Convection Cooling27Input - Gutput and Output - FG : 2121VDC (20mA)28Input - Gutput and Output - FG : 0000 Coll at 25° C and 70% RH34Isolation Resistance-35Vibration-36Shock (In Package) <td></td> <td></td> <td></td> <td></td>				
18         Temperature Coefficient         -         Less than 0.02% / °C           19         Over Current Protection         (*8)         -         Constant current limit with auto recovery/Latch           20         Over Voltage Protection         (*9)         V         30-35.5           21         Hold-up Time (Typ)         (*1)         ms         14           22         Leakage Current         (*10)         -            23         Remote Sensing         -         -         -           24         Remote ON/OFF control         -         DC OK Relay, DC OK LED, Peak LED         26           26         Series Operation         -         Possible         -         -           27         Parallel Operating Temperature         (*11.16)         -         -         -           20         Operating Temperature         (*11.16)         -         -         -         -           20         Operating Temperature         -				
19Over Current Protection(*8)-Constant current limit with auto recovery/Latch20Over Voltage Protection(*9)V $30-35.5$ 21Hold-up Time (Typ)(*1)ms1422Leakage Current(*10)-23Remote Sensing24Remote ON/OFF control-DC OK Relay, DC OK LED, Peak LED26Series Operation-DC OK Relay, DC OK LED, Peak LED27Parallel Operation-Possible28Operating Temperature(*11,16)-29Operating Humidity- $5\sim95\%$ RH (No dewdrop)30Storage Temperature31Storage Humidity- $5\sim95\%$ RH (No dewdrop)32Coling-Convection Cooling33Withstand Voltage-Input - Output and Output - FG44Isolation Resistance-Input - Output and Output - FG36Shock (In Package)-Less Than 196 m/s² (20G)37Operating Altitude-3000m38Safety-Less Than 196 m/s² (20G)39EMI-Designed to meet ENS5022-B, CLevel 2,3, -3 (Level 3), -4 (Level 3), -5 (Level 4), -1142Weight(Typ.)g130043Size (L x W x H)num82 x 123.4 x 115.4 (Refer to Outline drawing)			mV	
20Over Voltage Protection(*9)V $30-35.5$ 21Hold-up Time (Tvp)(*1)ms1422Leakage Current(*10)23Remote Sensing-24Remote ON/OFF control-Possible (Active Low)25Monitoring Signal-DC OK Relay, DC OK LED, Peak LED26Series Operation-Possible27Parallel Operation-Possible29Operating Temperature(*11,16)-20Operating Temperature(*11,16)-21Storage Temperature20Storage Temperature21Storage Temperature21Storage Temperature22Cooling-Convection Cooling33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output -FG: 50VDC (100mA), for 1 min.34Isolation Resistance-Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70% RH35Vibration-Approved by UL60950-1, CSA22, 2 No. 60950-1-07 (2nd Edition) IEC/EN60950-1, UL508.39EMI-Designed to meet EN55022-B, CISPR22-B, UO40CE-LVD, RHS 2, EMC41Immunity-Designed to meet EN61000-4-2 (Level 3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142Weight(Tvp.)gI300			-	
11121Hold-up Time (Typ)(*1)ns22Leakage Current(*10)-23Remote Sensing-24Remote Sensing-25Monitoring Signal-26Series Operation-27Parallel Operation-28Operating Temperature(*11,16)29Operating Temperature(*11,16)20Operating Temperature(*11,16)2122Operating Temperature(*11,16)29Operating Temperature-20Operating Temperature-2122Operating Temperature-23Storage Temperature-24Convection Cooling-25Cooling-26Convection Cooling-27Convection Cooling-28Cooling-29Convection Cooling-20Cooling-21Input - Output : 4242VDC (20mA), Input - G : 2121VDC (20mA) Output-FG; 50VDC (100mA), for 1 min.34Isolation Resistance-36Shock (In Package)-37Operating Altitude-38Safety-39Safety-30EMI-30Cooling-31Storage to meet ENS5022-B, CISPR22-B, 100032Cooling-33EMI-			-	
22       Leakage Current       (*10)       -       < < 1mA at 240VAC		())	V	
23       Remote Sensing       -         24       Remote ON/OFF control       -         25       Monitoring Signal       -         26       Series Operation       -         27       Parallel Operation       -         28       Operating Temperature       (*11,16)         29       Operating Temperature       (*11,16)         29       Operating Temperature       (*11,16)         29       Operating Humidity       -         30       Storage Temperature       -         31       Storage Temperature       -         32       Cooling       -         33       Withstand Voltage       -         34       Isolation Resistance       -         35       Vibration       -         36       Shock (In Package)       -         37       Operating Altitude       -         38       Safety       -       Input - FG, Input - Output and Output - FG         39       EMI       -       Less Than 196 m/s <sup>2</sup> (20G)         30       -       Less Than 196 m/s <sup>4</sup> (20G)         34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG         3000m			ms	
24       Remote ON/OFF control       -       Possible (Active Low)         25       Monitoring Signal       -       DC OK Relay, DC OK LED, Peak LED         26       Series Operation       -       Possible         27       Parallel Operation       -       Possible         28       Operating Temperature       (*11,16)       -       -         29       Operating Temperature       (*11,16)       -       -       -         29       Operating Temperature       -       -       -       -       -         30       Storage Temperature       -			-	< 1mA at 240VAC
25Monitoring Signal-DC OK Relay, DC OK LED, Peak LED26Series Operation-Possible27Parallel Operation-Possible28Operating Temperature(*11,16) $-25 \sim +60^{\circ}C : 100\%, +70^{\circ}C : 75\%$ 29Operating Humidity- $5 \sim 95\%$ RH (No dewdrop)30Storage Temperature- $-40^{\circ}C + 48^{\circ}C$ 31Storage Humidity- $5 \sim 95\%$ RH (No dewdrop)32Cooling-Convection Cooling33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.34Isolation Resistance-Input - Output and Output - FG More than 100MQ (500VDC) at 25°C and 70% RH35Vibration-At no operating, 10 - 55Hz (sweep for Imin) 19.6m/s <sup>2</sup> Constant, X, Y, Z Ihour each.36Shock (In Package)-Less Than 196 m/s <sup>4</sup> (20G)37Operating Altitude-3000m38Safety-Less Than 196 m/s <sup>4</sup> (20G)39EMI-Designed to meet EN55022-B, CISPR22-B, LC/EN60950-1.07 (2nd Edition) IEC/EN60950-1, UL508.39EMI-Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142Weight(Typ.)g130043Size (L x W x H)mm $82 \times 123.4 \times 115.4$ (Refer to Outline drawing)			-	-
26Series Operation-Possible27Parallel Operation-Possible28Operating Temperature(*11,16)- $-25 \sim +60^\circ$ C : 100%, $+70^\circ$ C : 75%29Operating Humidity- $5 \sim 95\%$ RH (No dewdrop)30Storage Temperature- $-40^\circ$ C $\sim +85^\circ$ C31Storage Humidity32Cooling-Convection Cooling33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.34Isolation Resistance-Input - Output : 4242VDC (20mA), Input - FG35Vibration-At no operating, 10 - 55Hz (sweep for 1min) 19.6m/s <sup>2</sup> Constant, X, Y, Z Ihour each.36Shock (In Package)-Less Than 196 m/s <sup>2</sup> (20G)37Operating Altitude-3000m38Safety-Designed to meet EN55022-B, CISPR22-B, LVD, RoHS 2, EMC40CE-LVD, RoHS 2, EMC41Immunity-Designed to meet EN61000-4-2 (Level 3,, -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142Weight(Typ.)g130043Size (L x W x H)mm $82 x 123.4 x 115.4$ (Refer to Outline drawing)			-	
27 Parallel Operation-Possible28 Operating Temperature(*11,16)- $-25 \sim +60^\circ C: 100\%, +70^\circ C: 75\%$ 29 Operating Humidity- $5 \sim 95\%$ RH (No dewdrop)20 Storage Temperature- $-40^\circ C - *85^\circ C$ 31 Storage Humidity- $5 \sim 95\%$ RH (No dewdrop)32 Cooling-Convection Cooling33 Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output : FG : 500VDC (100mA), for 1 min.34 Isolation Resistance-Input - Output : 600VDC (100mA), for 1 min.35 Vibration-Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70% RH36 Shock (In Package)-Less Than 196 m/s² (20G)37 Operating Altitude-Less Than 196 m/s² (20G)38 Safety-Less Than 196 m/s² (20G)39 EMI-Designed to meet EN55022-B, CISPR22-B, LVD, RoHS 2, EMC40 CE-LVD, RoHS 2, EMC41 Immunity-Designed to meet EN61000-4-2 (Level 3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142 Weight(Typ.)g130043 Size (L x W x H)mm82 x 123.4 x 115.4 (Refer to Outline drawing)	25	Monitoring Signal	-	DC OK Relay, DC OK LED, Peak LED
28Operating Temperature(*11,16) $-25\sim+60^\circ$ C: 100%, $+70^\circ$ C: 75%29Operating Humidity- $5\sim95\%$ RH (No dewdrop)30Storage Temperature- $-40^\circ$ C ~ $+85^\circ$ C31Storage Humidity- $5\sim95\%$ RH (No dewdrop)32Cooling-Convection Cooling33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA)34Isolation Resistance-Input - Output : 4242VDC (20mA), for 1 min.35Vibration-Input - FG, Input - Output and Output - FG36Shock (In Package)-At no operating, 10 - 55Hz (sweep for 1 min)38Safety-Less Than 196 m/s² (20G)39EMI-Designed to meet EN55022-B, CISPR22-B,40CE-LVD, RoHS 2, EMC41Immunity-Designed to meet EN61000-4-2 (Level 3), -3 (Level 3),42Weight(Typ.)g130043Size (L x W x H)mm82 x 123.4 x 115.4 (Refer to Outline drawing)	26	Series Operation	-	Possible
29Operating Humidity- $5\sim95\%$ RH (No dewdrop)30Storage Temperature- $-40^{\circ}C \sim +85^{\circ}C$ 31Storage Humidity- $5\sim95\%$ RH (No dewdrop)32Cooling-Convection Cooling33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.34Isolation Resistance-Input - Output : 4242VDC (20mA), Input - FG35Vibration-Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70% RH36Shock (In Package)-Less Than 196 m/s² (20G) 3000m37Operating Altitude3000m38Safety-Approved by UL60950-1, UL508.39EMI-Designed to meet EN55022-B, CISPR22-B, LVD, RoHS 2, EMC40CE-LVD, RoHS 2, EMC41Immunity-Designed to meet EN51000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142Weight(Typ.)g130043Size (L x W x H)mm $82 x 123.4 x 115.4$ (Refer to Outline drawing)	27	Parallel Operation	-	
30       Storage Temperature       -       -40°C ~ +85°C         31       Storage Humidity       -       5~95%RH (No dewdrop)         32       Cooling       -       Convection Cooling         33       Withstand Voltage       -       Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.         34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70%RH         35       Vibration       -       At no operating, 10 - 55Hz (sweep for 1min)         36       Shock (In Package)       -       Less Than 196 m/s² (20G)         37       Operating Altitude       3000m       3000m         38       Safety       -       Designed to meet EN55022-B, CISPR22-B, Level 4), -6 (Level 3), -3 (Level 3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	28	Operating Temperature (*11,16)	-	$-25 \sim +60^{\circ}\text{C} : 100\%, +70^{\circ}\text{C} : 75\%$
31       Storage Humidity       -       5~95%RH (No dewdrop)         32       Cooling       -       Convection Cooling         33       Withstand Voltage       -       Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.         34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70%RH         35       Vibration       -       At no operating, 10 - 55Hz (sweep for 1min)         19.6m/s² Constant, X, Y, Z 1hour each.       -       Less Than 196 m/s² (20G)         36       Shock (In Package)       -       Less Than 196 m/s² (20G)         37       Operating Altitude       3000m         38       Safety       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3),         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)			-	$5\sim$ 95%RH (No dewdrop)
32       Cooling       -       Convection Cooling         33       Withstand Voltage       -       Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.         34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70%RH         35       Vibration       -       At no operating, 10 - 55Hz (sweep for 1min)         36       Shock (In Package)       -       Less Than 196 m/s² (20G)         37       Operating Altitude       3000m         38       Safety       -       Designed to meet EN55022-B, CISPR22-B,         39       EMI       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3),         41       Immunity       -       Designed to meet EN61000-4-2 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	30	Storage Temperature	-	-40°C ~ +85°C
32       Cooling       -       Convection Cooling         33       Withstand Voltage       -       Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.         34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG         35       Vibration       -       At no operating, 10 - 55Hz (sweep for 1min)         36       Shock (In Package)       -       Less Than 196 m/s² (20G)         37       Operating Altitude       3000m         38       Safety       -       Approved by UL60950-1, CSA22.2 No. 60950-1-07 (2nd Edition) IEC/EN60950-1, UL508.         39       EMI       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	31	Storage Humidity	-	
33Withstand Voltage-Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA) Output-FG: 500VDC (100mA), for 1 min.34Isolation Resistance-Input - FG, Input - Output and Output - FG More than 100MΩ (500VDC) at 25°C and 70% RH35Vibration-At no operating, 10 - 55Hz (sweep for 1min) 19.6m/s² Constant, X, Y, Z Ihour each.36Shock (In Package)-Less Than 196 m/s² (20G)37Operating Altitude3000m38Safety-Designed to meet EN55022-B, CISPR22-B, LVD, RoHS 2, EMC40CE-LVD, RoHS 2, EMC41Immunity-Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -1142Weight(Typ.)g130043Size (L x W x H)mm82 x 123.4 x 115.4 (Refer to Outline drawing)			-	Convection Cooling
34       Isolation Resistance       -       Input - FG, Input - Output and Output - FG         35       Vibration       -       At no operating, 10 - 55Hz (sweep for 1min)         36       Shock (In Package)       -       Less Than 196 m/s <sup>2</sup> (20G)         37       Operating Altitude       3000m         38       Safety       -       Less Than 196 m/s <sup>2</sup> (20G)         39       EMI       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3),         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       nm       82 x 123.4 x 115.4 (Refer to Outline drawing)	33	Withstand Voltage	-	Input - Output : 4242VDC (20mA), Input - FG : 2121VDC (20mA)
More than 100MΩ (500VDC) at 25°C and 70% RH35Vibration-36Shock (In Package)-37Operating Altitude-38Safety-39EMI-40CE-41Immunity-42Weight(Typ.)g43Size (L x W x H)mm8Size (L x W x H)mm	34	Isolation Resistance	-	Input - FG, Input - Output and Output - FG
Image: 19.6m/s <sup>2</sup> Constant, X, Y, Z Ihour each.           36 Shock (In Package)         -           37 Operating Altitude         3000m           38 Safety         -           39 EMI         -           40 CE         -           41 Immunity         -           42 Weight(Typ.)         g           43 Size (L x W x H)         mm           8 Size (L x W x H)         mm				More than $100M\Omega$ (500VDC) at 25°C and 70%RH
Image: 19.6m/s <sup>2</sup> Constant, X, Y, Z Ihour each.           36 Shock (In Package)         -           37 Operating Altitude         3000m           38 Safety         -           39 EMI         -           40 CE         -           41 Immunity         -           42 Weight(Typ.)         g           43 Size (L x W x H)         mm           8 Size (L x W x H)         mm	35	Vibration	-	At no operating, 10 - 55Hz (sweep for 1min)
36       Shock (In Package)       -       Less Than 196 m/s <sup>2</sup> (20G)         37       Operating Altitude       3000m         38       Safety       -       Approved by UL60950-1, CSA22.2 No. 60950-1-07 (2nd Edition) IEC/EN60950-1, UL508.         39       EMI       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	55	· Iorution		
37       Operating Altitude       3000m         38       Safety       -       Approved by UL60950-1, CSA22.2 No. 60950-1-07 (2nd Edition) IEC/EN60950-1, UL508.         39       EMI       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	20	Shooly (In Dealrose)		19.011/8 Constant, A, I, Z mour each.
38       Safety       -       Approved by UL60950-1, CSA22.2 No. 60950-1-07 (2nd Edition) IEC/EN60950-1, UL508.         39       EMI       -       Designed to meet EN55022-B, CISPR22-B,         40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)		Shock (III Package)	-	
IEC/EN60950-1, UL508.           39 EMI         -           40 CE         -           41 Immunity         -           42 Weight(Typ.)         g           43 Size (L x W x H)         mm           82 x 123.4 x 115.4 (Refer to Outline drawing)				
40       CE       -       LVD, RoHS 2, EMC         41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	38	Safety	-	IEC/EN60950-1, UL508.
41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	39	EMI	-	
41       Immunity       -       Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3), -4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11         42       Weight(Typ.)       g       1300         43       Size (L x W x H)       mm       82 x 123.4 x 115.4 (Refer to Outline drawing)	40	СЕ	-	
-4 (Level 3), -5 (Level 4), -6 (Level 3), -8 (Level 4), -11           42 Weight(Typ.)         g           43 Size (L x W x H)         mm           82 x 123.4 x 115.4 (Refer to Outline drawing)	41	Immunity	-	Designed to meet EN61000-4-2 (Level 2,3), -3 (Level 3),
42         Weight(Typ.)         g         1300           43         Size (L x W x H)         mm         82 x 123.4 x 115.4 (Refer to Outline drawing)		-		
43 Size (L x W x H) mm 82 x 123.4 x 115.4 (Refer to Outline drawing)	42	Weight(Typ)	σ	1300

<sup>4</sup> Read instruction manual carefully, before using the power supply unit.

=NOTES=

\*1. At Maximum Output Power, nominal input voltage,  $Ta = 25^{\circ}C$ .

\*2. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC, 50 / 60Hz on name plate.

\*3. Not applicable for the in-rush current to Noise Filter for less than 0.2mS.

\*4. Ripple & noise are measured at 20MHz by using a 300mm twisted pair of load wires terminated with a 0.1uF Film Capacitor and a 47uF Electrolytic Capacitor.

\*5. Measure line & load regulation at output terminal.

\*6. 85 - 264VAC, constant load.\*7. No load - Full load, constant input voltage.

\*8. Constant current limit with auto recovery. Over rated current (>105%) condition for more than 4 sec will cause power supply to shutdown. Output may enter hiccup mode when the output voltage falls below approximately 20V or at short circuit condition.

\*9. OVP circuit will shutdown output, manual reset (CNT reset or Re-power on).

\*10. Measured by each measuring method of UL and EN (at 60Hz),  $Ta = 25^{\circ}C$ .

\*11. Refer to Output Derating Curve (PA620-01-02\_) for details of output derating versus ambient temperature.

\*12. Operating period at peak output current is 4sec. max, duty ≤ 0.35, <20Arms Current.

\*13. Refer to Figure 1 Output Current vs Input Voltage Derating curve (PA620-01-02\_).

\*14. Standby input power refers to the power consumption during remote off.

\*15. All parameters not specifically mentioned are measured at 230VAC input, rated load and  $Ta = 25^{\circ}C$ .

\*16. For cases where conformance to various safety specs, operating temperature is  $-25 \sim +70^{\circ}$ C.

# **TDK-Lambda**

### DRF480-24-1 PA620-01-02

