MURD550PF

Preferred Device

SWITCHMODE™ Power Rectifier

DPAK Surface Mount Package

These state−of−the−art devices are designed for power factor correction in discontinuous and critical conduction mode.

Features

- Low Forward Voltage Drop
- Low Leakage
- Ultrafast 95 Nanosecond Recovery Time
- Reduces Forward Conduction Loss
- Pb−Free Package is Available

Mechanical Characteristics

- Case: Epoxy, Molded
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 0.4 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Available in 16 mm Tape and Reel, 2500 Units Per Reel, by Adding a "T4" Suffix to the Part Number

MAXIMUM RATINGS

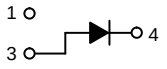
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	500	V
Average Rectified Forward Current (Rated V_R, T_C = 160°C)	$I_{F(AV)}$	5.0	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, 60 Hz)	I_{FSM}	75	A
Operating Junction Temperature Range	T_J	−65 to +175	°C
Storage Temperature Range	T_{stg}	−65 to +175	°C
ESD Ratings: Machine Model = C Human Body Model = 3B	ESD	 > 400 >8000	V

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ON Semiconductor®

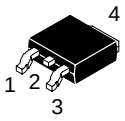
http://onsemi.com

ULTRAFAST RECTIFIER 5.0 AMPERES, 500 VOLTS

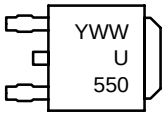


Pin 1: No Connect

MARKING DIAGRAM



DPAK
CASE 369C



Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
MURD550PFT4	DPAK	2500/Tape & Reel
MURD550PFT4G	DPAK (Pb−Free)	2500/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance − Junction−to−Case (Note 1)	$R_{\theta JC}$	2.8	°C/W
Thermal Resistance − Junction−to−Ambient (Note 2)	$R_{\theta JA}$	62	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage Drop (Note 3) (I_F = 5 Amps, T_J = 25°C) (I_F = 5 Amps, T_J = 150°C)	V_F	 1.15 0.98	V
Maximum Instantaneous Reverse Current (Note 3) (V_R = 500 V, T_J = 25°C) (V_R = 500 V, T_J = 150°C)	I_R	 5.0 400	μA
Maximum Reverse Recovery Time (I_F = 1 Amp, di/dt = 50 Amps/μs, V_R = 30 V, T_J = 25°C)	t_{rr}	 95	ns

1. Rating applies when surface mounted on the minimum pad sizes recommended.
2. 1 inch square pad size on FR4 board.
3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

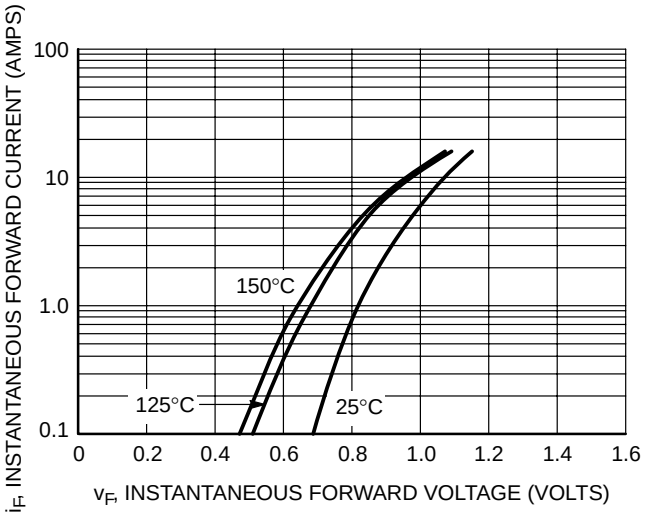


Figure 1. Typical Forward Voltage

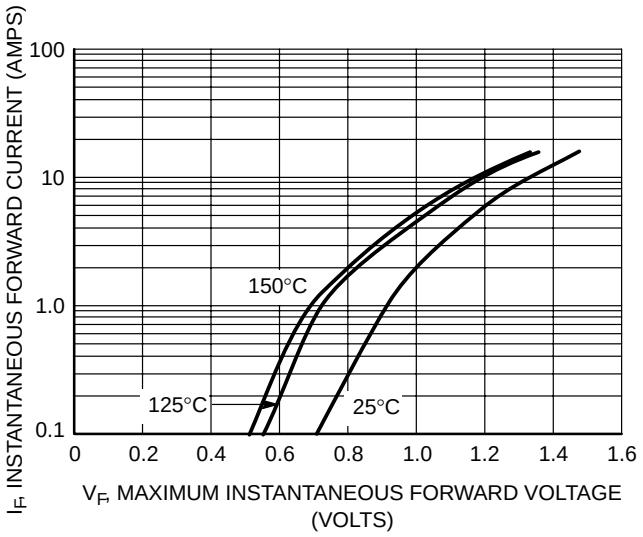


Figure 2. Maximum Forward Voltage

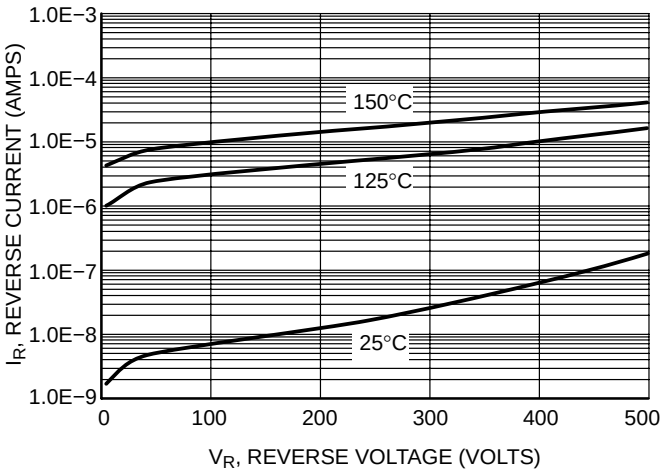


Figure 3. Typical Reverse Current

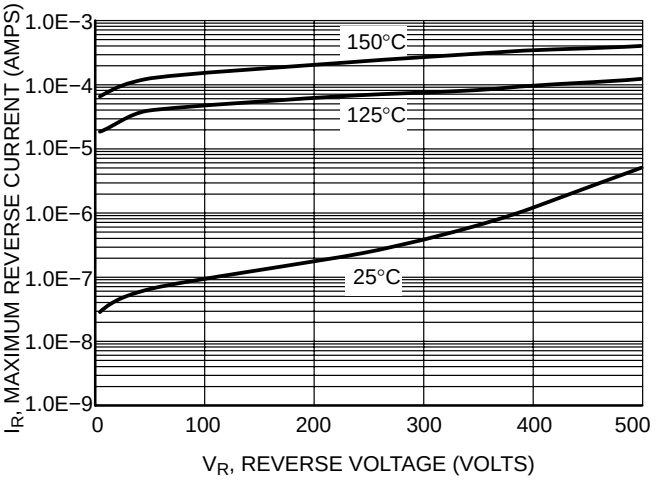


Figure 4. Maximum Reverse Current

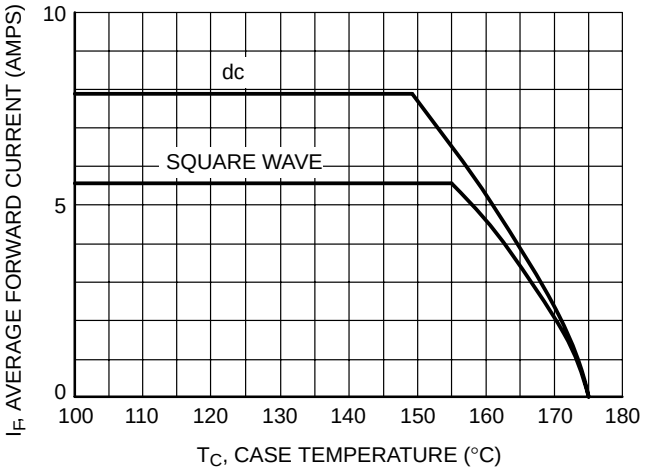


Figure 5. Current Derating

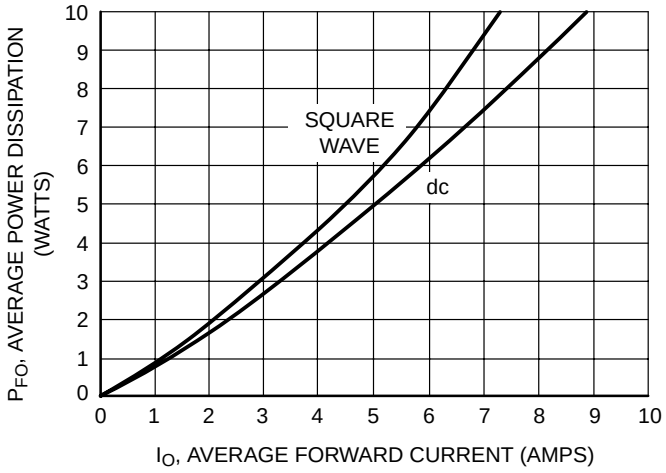


Figure 6. Forward Power Dissipation

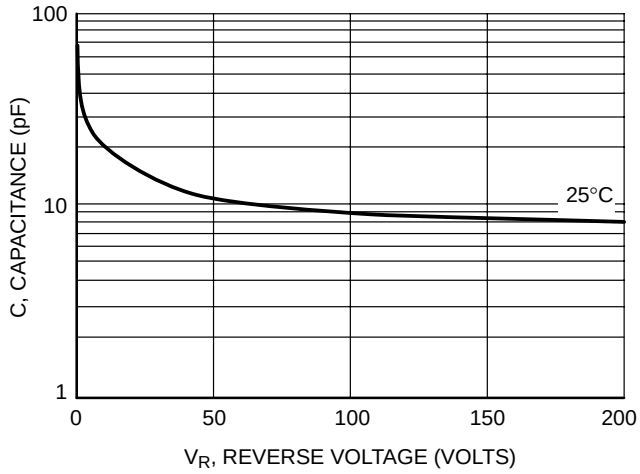


Figure 7. Capacitance

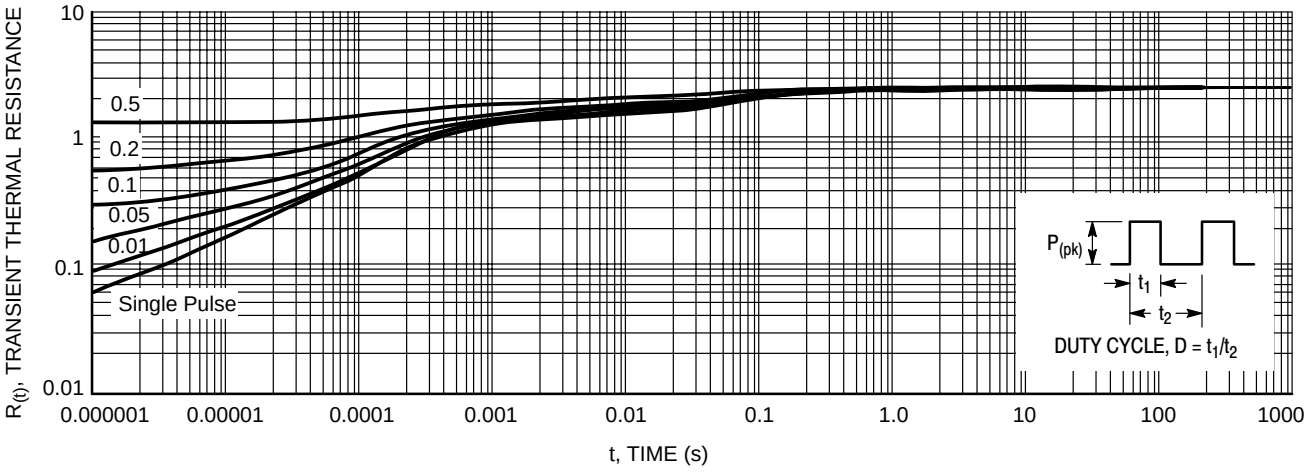
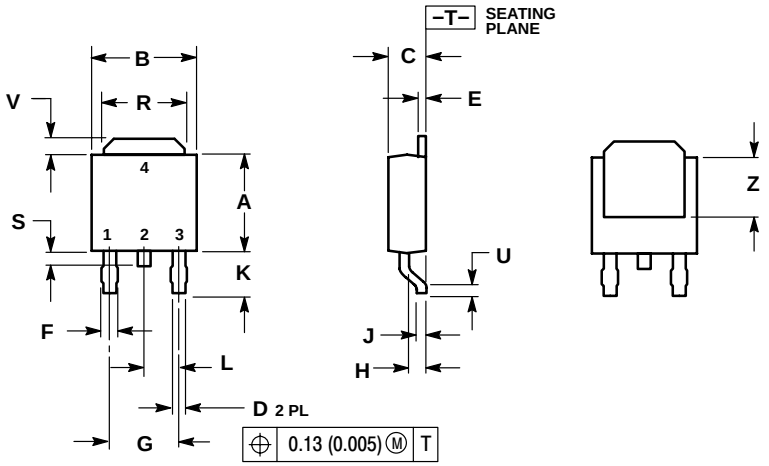


Figure 8. Thermal Response

MURD550PF

PACKAGE DIMENSIONS

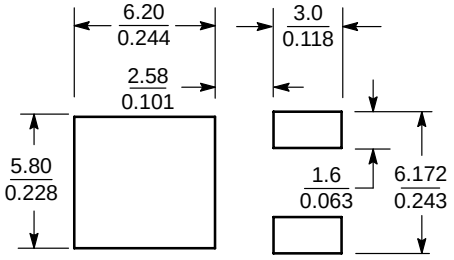
DPAK
CASE 369C−01
ISSUE O



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.235	0.245	5.97	6.22
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.018	0.023	0.46	0.58
F	0.037	0.045	0.94	1.14
G	0.180 BSC		4.58 BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.180	0.215	4.57	5.45
S	0.025	0.040	0.63	1.01
U	0.020	−−−	0.51	−−−
V	0.035	0.050	0.89	1.27
Z	0.155	−−−	3.93	−−−

SOLDERING FOOTPRINT*



SCALE 3:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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PUBLICATION ORDERING INFORMATION

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Literature Distribution Center for ON Semiconductor
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