Semitel
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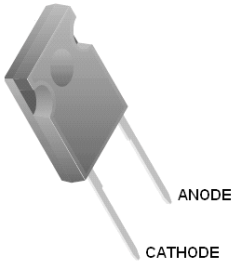
MUR6060PT

Ultrafast Plastic Power Rectifiers

Description

This device is an ultrafast diode with soft recovery characteristics (t_{rr}<45ns).
It is intended for use as a freewheeling /clamping diode and rectifier in a variety of high frequency switching power supplies and other power switching applications. It has low stored charge and ultrafast soft recovery minimize ringing and electrical noise in many power switching circuits, thus reducing power loss in the switching transistors.



TO-247

Features

- Ultrafast with Soft Recovery ..... <45ns
- Reverse Voltage 600V
- Avalanche Energy Rated
- Planar Construction

Applications

- Switching Power Supplies
- Power Switching Circuits
- General Purpose

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	600	V
Average Rectified Forward Current(T_C = 110°C,Duty=0.5) Repetitive Peak Surge Current(T_C = 110°C,Duty=0.5) Nonrepetitive Peak Surge Current(T_J = 45°C, 8.3ms)	$I_{F(AV)}$ I_{FRM} I_{FSM}	60 90 600	A
Storage Temperature Range	T_{STG}	-40-150	°C
Junction Temperature	T_J	-40-150	°C
Junction to Ambient thermal resistance	$R_{\theta JA}$	62.5	°C /W
Junction to Case thermal resistance	$R_{\theta JC}$	2.0	°C /W

Electrical Characteristics (T_C =25°C)

Parameter	Symbol
Instantaneous forward voltage (pw = 300us, D = 2%)	V_F
Instantaneous reverse current	I_R
Reverse recovery time (Figure 6), summation of t_a + t_b	t_{rr}
Reverse recovery Charge	Q_{rr}
Max. Reverse recovery Current	I_{RRM}
Junction to free air thermal resistance	$R_{\theta JA}$
Pulse width	pw
Duty cycle	D

Electrical Specifications (T_C =25°C)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
V_F	I_F=60A, $T_{A\backslash C}$=25°C		1.3	1.7	V
	I_F=60A, T_C=125°C		1.1		V
I_R	V_R=600V, T_C=25°C			50	μA
	V_R=600V, T_C=125°C			250	μA
t_{rr}	I_F=1A, V_R=30V, di/dt=200A/μs		45		ns
	I_F=60A, V_R=300V, di/dt=200A/μs,T_C=25°C		85		ns
	I_F=60A, V_R=300V, di/dt=200A/μs,T_C=125°C		220		ns
Q_{rr}	I_F=60A, V_R=300V, di/dt=200A/μs,T_C=125°C		2400		nC
I_{RRM}	I_F=60A, V_R=300V, di/dt=200A/μs,T_C=125°C		22		A

Typical Performance Curves

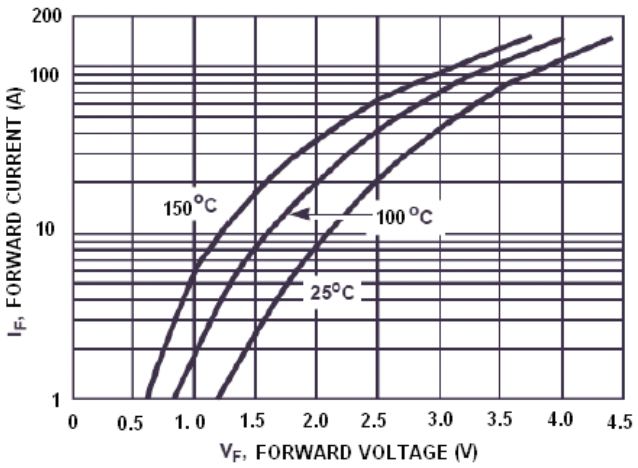


FIGURE1. FORWARD CURRENT vs FORWARD VOLTAGE

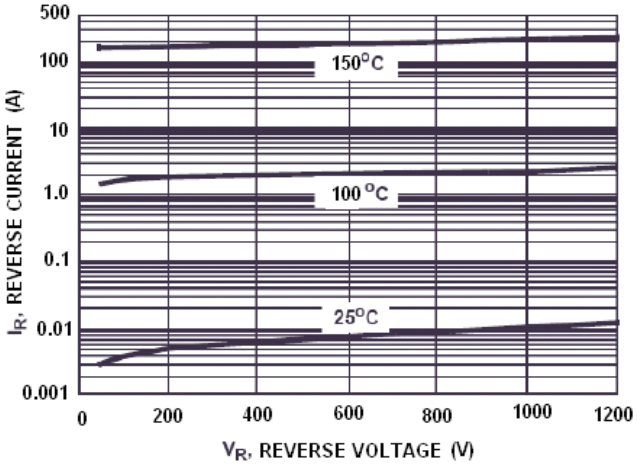


FIGURE2. REVERSE CURRENT vs REVERSE VOLTAGE

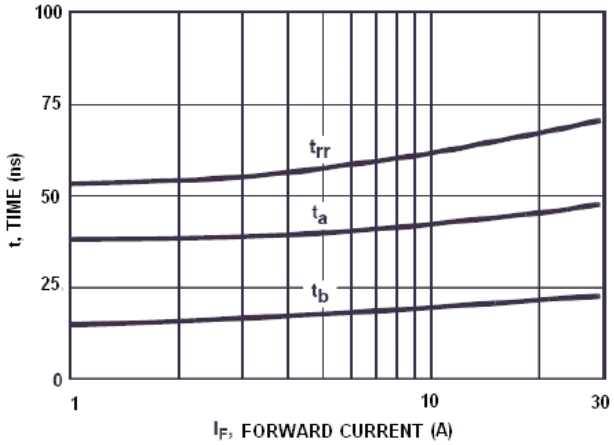


FIGURE 3. t_{rr}, t_a AND t_b CURVES vs FORWARD CURRENT

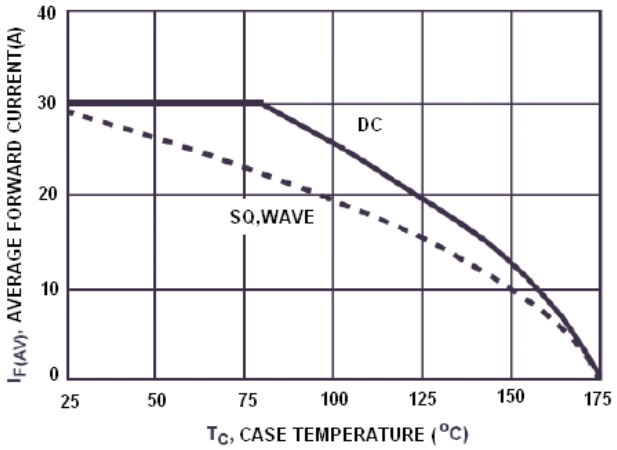


FIGURE 4. CURRENT DERATING CURVE

Test Circuits and Waveforms

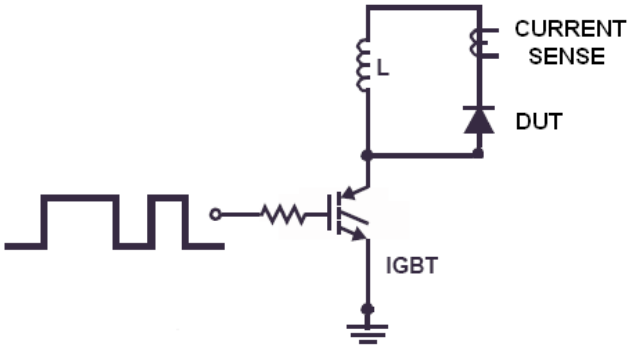


FIGURE 5. t_{rr} TEST CIRCUIT

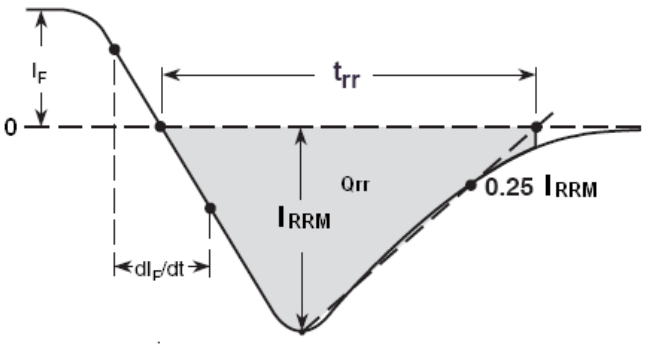
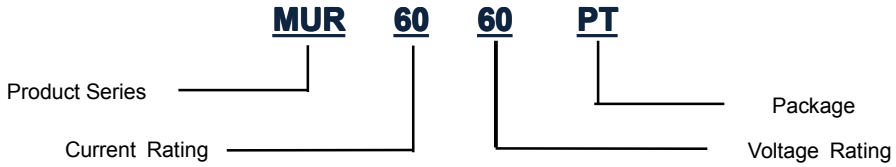


FIGURE 6. t_{rr} WAVEFORMS AND DEFINITIONS

Marking and Order Information

Part Number System



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
MUR6060PT	TO-247	5.26g	Tube & Box	1,200 pcs/box	Lead Free