

MSRD620CT

SWITCHMODE™ Soft Ultrafast Recovery Power Rectifier

Plastic DPAK Package

State of the art geometry features epitaxial construction with glass passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies, free wheeling diode and polarity protection diodes.

- Soft Ultrafast Recovery (35 ns typ.)
- Highly Stable Oxide Passivated Junction
- Matched Dual Die Construction — May Be Paralleled for High Current Output
- Short Heat Sink Tab Manufactured — Not Sheared
- Epoxy Meets UL94, V_O at 1/8"

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 0.4 grams (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
- Shipped in 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per Reel, Add "T4" to Suffix part number
- Marking: S620T

MAXIMUM RATINGS

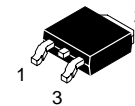
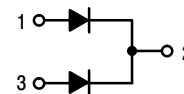
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	200	V
Average Rectified Forward Current (At Rated V _R , T _C = 137°C) Per Leg Per Package	I _O	3.0 6.0	A
Peak Repetitive Forward Current (At Rated V _R , Square Wave, 20 kHz, T _C = 138°C) Per Leg	I _{FRM}	6.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) Per Package	I _{FSM}	50	A
Storage/Operating Case Temperature Range	T _{stg} , T _C	-55 to +175	°C
Operating Junction Temperature Range	T _J	-55 to +175	°C



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SOFT ULTRAFAST RECTIFIER 6.0 AMPERES 200 VOLTS



DPAK
CASE 369A
PLASTIC

MARKING DIAGRAM



S620T = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MSRD620CT	DPAK	75 Units/Rail
MSRD620CTT4	DPAK	2500/Tape & Reel

MSRD620CT

THERMAL CHARACTERISTICS

Rating		Symbol	Value	Unit
Thermal Resistance – Junction to Case – Junction to Ambient	Per Leg	$R_{\theta JC}$	9.0	$^{\circ}C/W$
	Per Leg	$R_{\theta JA}$	80	

ELECTRICAL CHARACTERISTICS

Rating		Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1.), see Figure 2. ($I_F = 3.0\text{ A}$) ($I_F = 6.0\text{ A}$)	Per Leg	V_F	$T_J = 25^{\circ}C$	V
			$T_J = 150^{\circ}C$	
Maximum Instantaneous Reverse Current, see Figure 4. ($V_R = 200\text{ V}$) ($V_R = 100\text{ V}$)	Per Leg	I_R	$T_J = 25^{\circ}C$	μA
			$T_J = 150^{\circ}C$	
Maximum Reverse Recovery Time (Note 2.) ($V_R = 30\text{ V}$, $I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu s$) ($V_R = 30\text{ V}$, $I_F = 3.0\text{ A}$, $di/dt = 50\text{ A}/\mu s$)	Per Leg	t_{rr}	45	ns
			55	
Maximum Peak Reverse Recovery Current ($V_R = 30\text{ V}$, $I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu s$) ($V_R = 30\text{ V}$, $I_F = 3.0\text{ A}$, $di/dt = 50\text{ A}/\mu s$)	Per Leg	I_{RM}	2.0	A
			3.0	

1. Pulse Test: Pulse Width $\leq 250\ \mu s$, Duty Cycle $\leq 2\%$.
2. t_{rr} measured projecting from 25% of I_{RM} to ground.

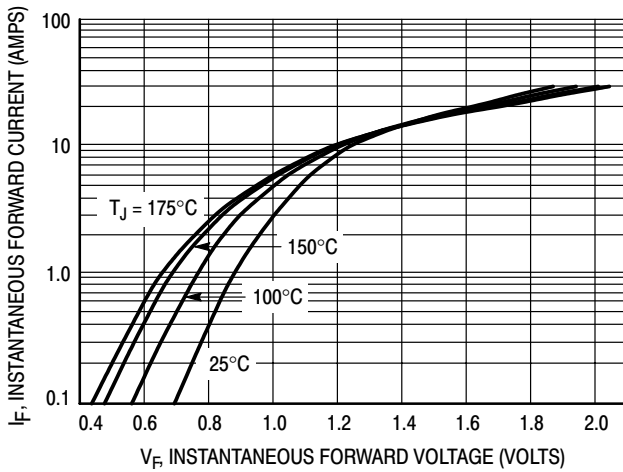


Figure 1. Typical Forward Voltage, Per Leg

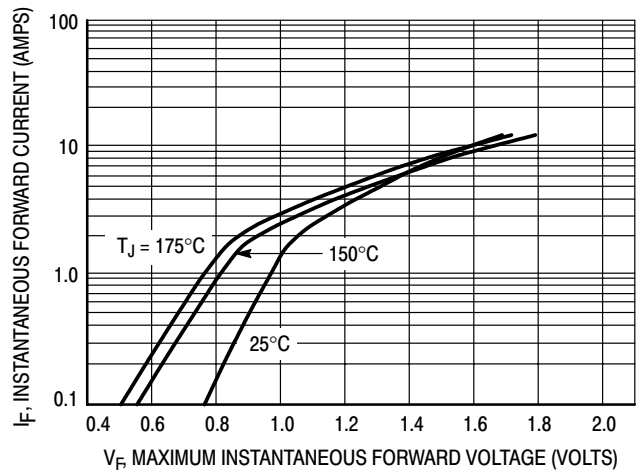


Figure 2. Maximum Forward Voltage, Per Leg

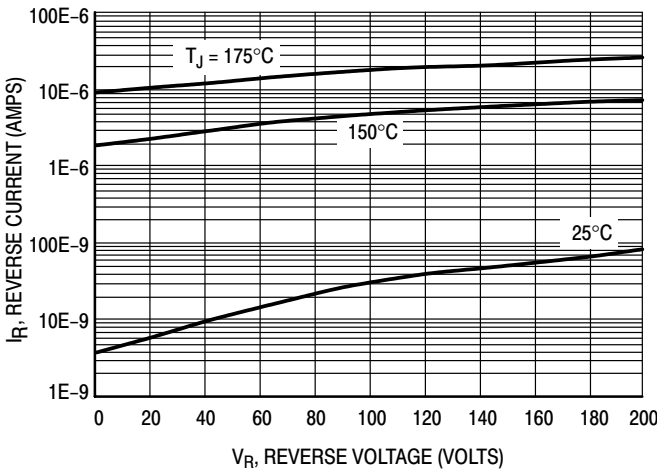


Figure 3. Typical Reverse Current, Per Leg

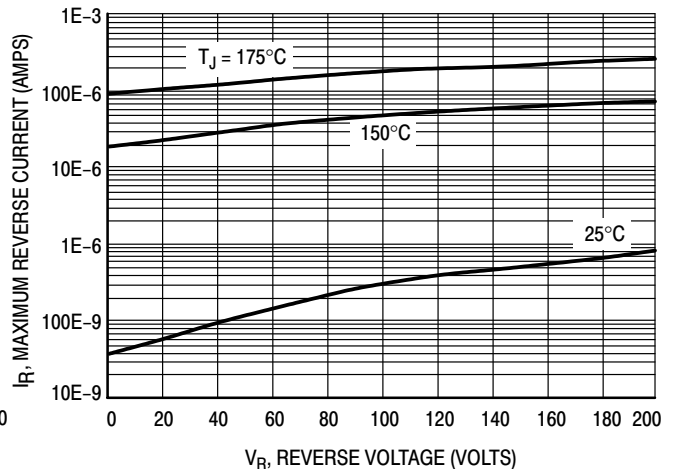


Figure 4. Maximum Reverse Current, Per Leg

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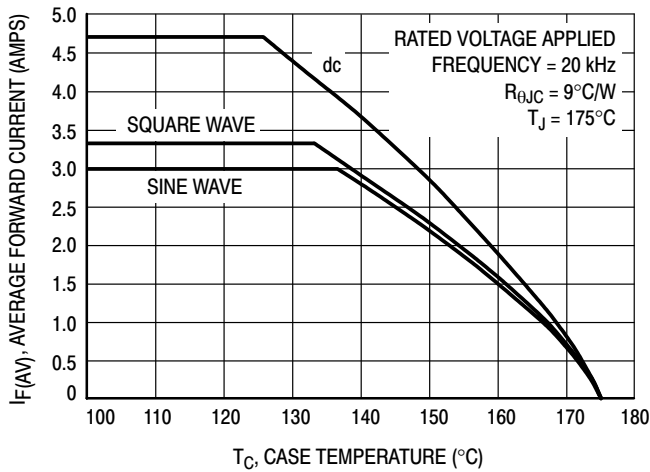


Figure 5. Current Derating, Case (Per Leg)

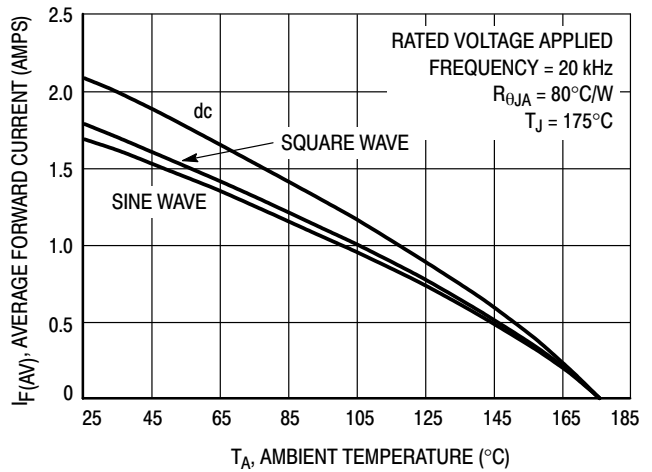


Figure 6. Current Derating, Ambient (Per Leg)

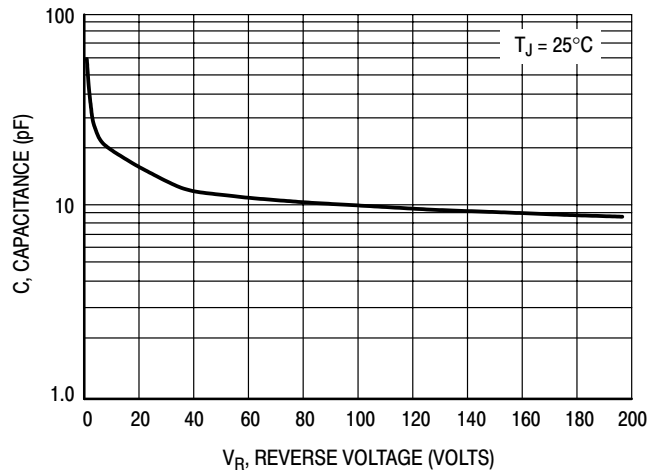


Figure 7. Typical Capacitance (Per Leg)

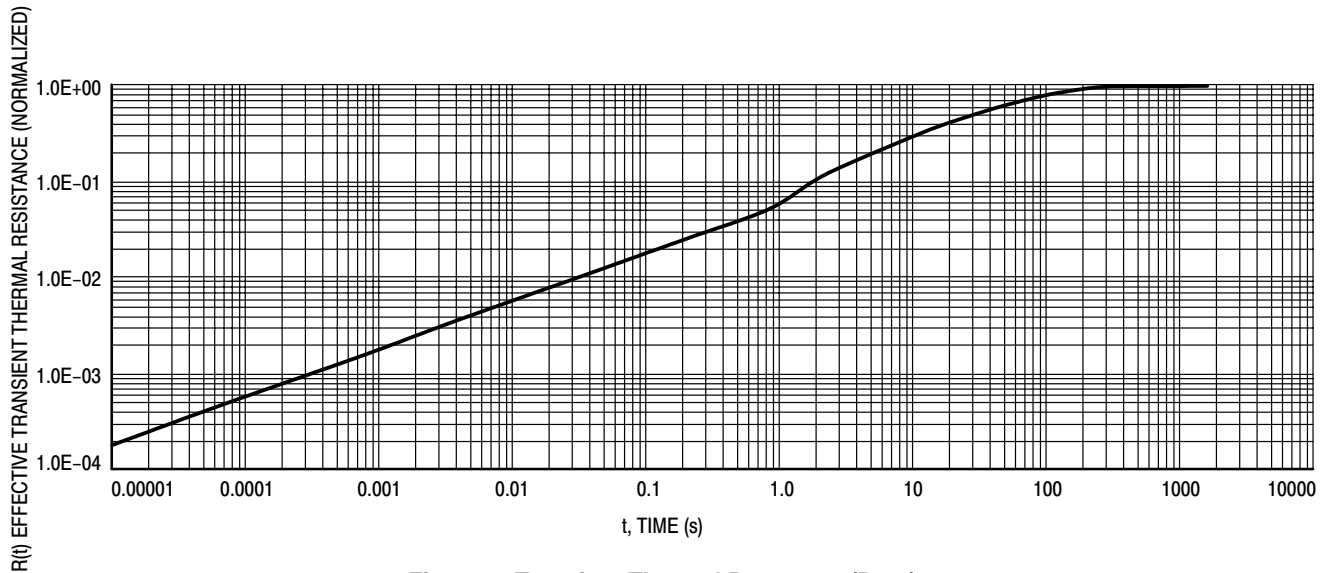


Figure 8. Transient Thermal Response ($R_{\theta JA}$)

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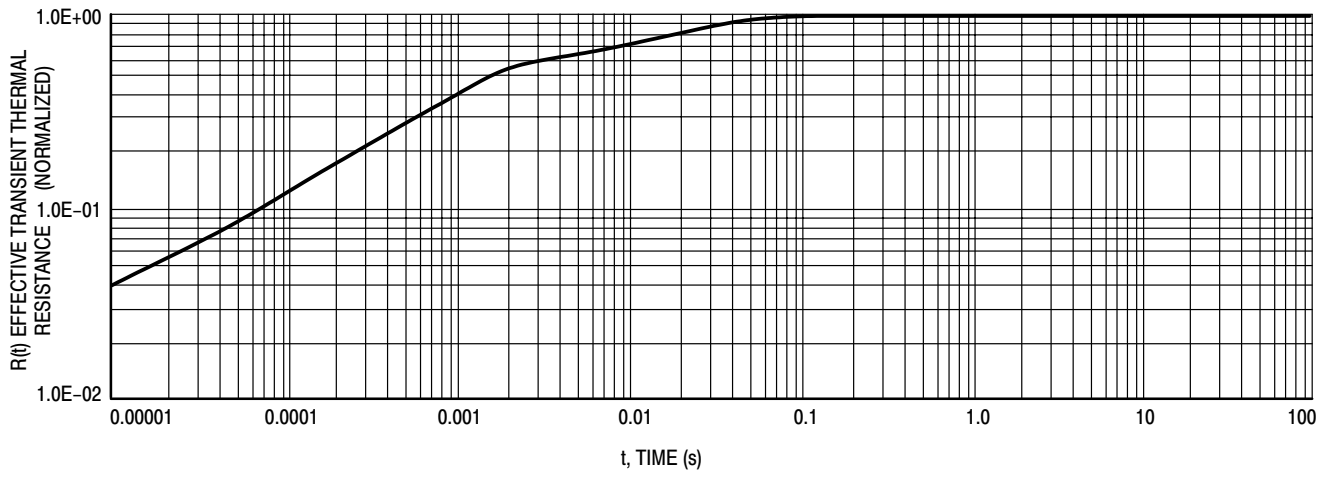
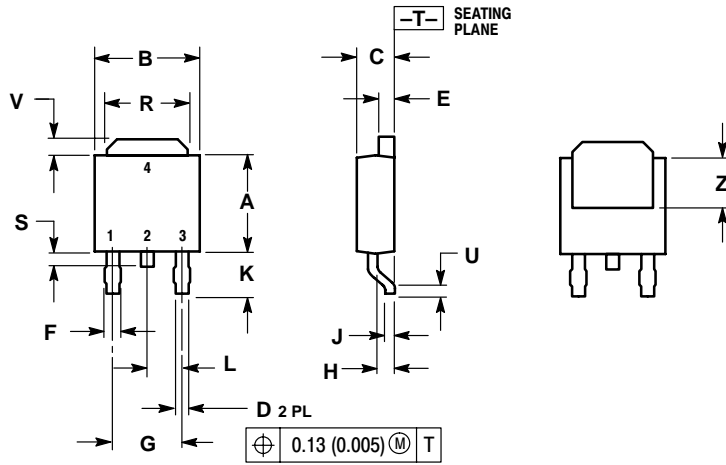


Figure 9. Transient Thermal Response ($R_{\theta JC}$)

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PACKAGE DIMENSIONS

DPAK
CASE 369A-13
ISSUE AA



NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.235	0.250	5.97	6.35
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	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
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	0.175	0.215	4.45	5.46
S	0.020	0.050	0.51	1.27
U	0.020	---	0.51	---
V	0.030	0.050	0.77	1.27
Z	0.138	---	3.51	---

Notes

Notes

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