Features

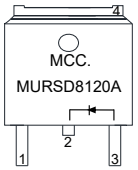
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant(Note 2) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar Structure Die and Soft Recovery Characteristics

8 Amp FRED Rectifiers 1200 Volts

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	1200	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	V_{RMS}	840	V
Average Rectified Forward Current	$I_{F(AV)}$	8	A
Non−Repetitive Peak Surge Current @8.3ms Half Sine Wave	I_{FSM}	60	A
Current Squared Time @ 1ms≤t≤8.3ms	I^2t	14.94	A^2s

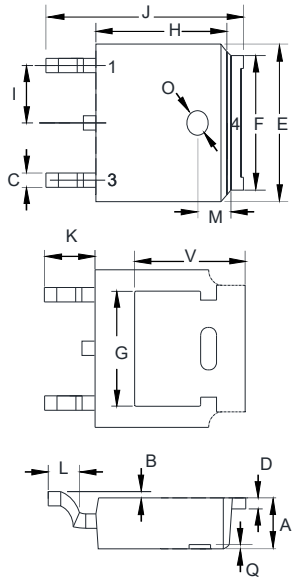
Internal Structure

Pin	Description	Simplified Outline	Graphic Symbol
1	N/C		
2&4	Cathode		
3	Anode		

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

(TO-252) DPAK



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$Rth_{(J-C)}$	Thermal Resistance from Junction to Case			3		°C/W
$Rth_{(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		40		°C/W

Note:
1.Mounted on P.C.B. with 1in2 (25.4 mm x 25.4 mm) copper pad areas.

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F=8A;T_J=25°C		2.0	2.5	V
		I_F=8A;T_J=125°C		1.7	2.1	
Reverse Current	I_R	V_R=1200V;T_J=25°C			5	uA
		V_R=1200V;T_J=125°C			200	
Junction Capacitance	C_J	V_R=4V;f=1MHz;T_J=25°C		26		pF

Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Recovery Time	t_{rr}	I_F=0.5A; I_R=1.0A;I_{RR}=0.25A;T_J=25°C			44	75	ns
		I_F=8A d_{iF}/d_t=-200A/μs V_{RM}=400V	T_J=25°C		249		
			T_J=125°C		438		
Peak Recovery Current	I_{RRM}		T_J=25°C		5.2		A
			T_J=125°C		7.3		
Reverse Recovery Charge	Q_{rr}		T_J=25°C		645		nC
			T_J=125°C		1555		

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

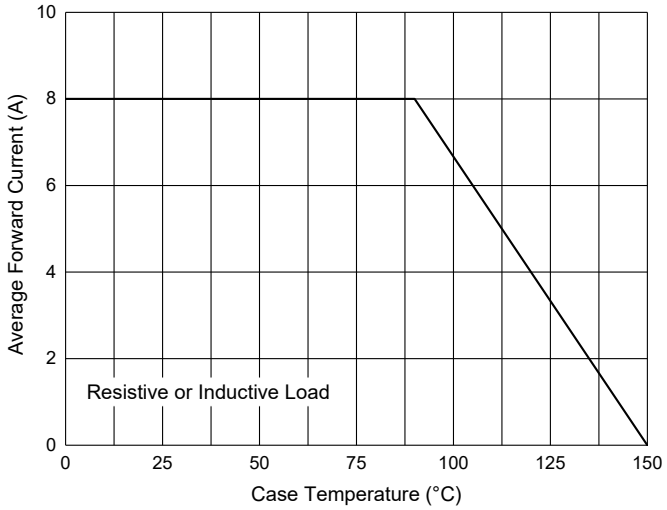


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

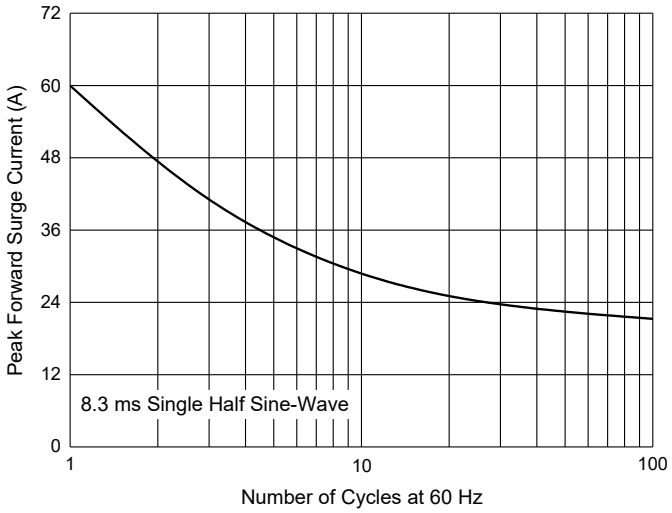


Fig. 3 - Typical Forward Characteristics

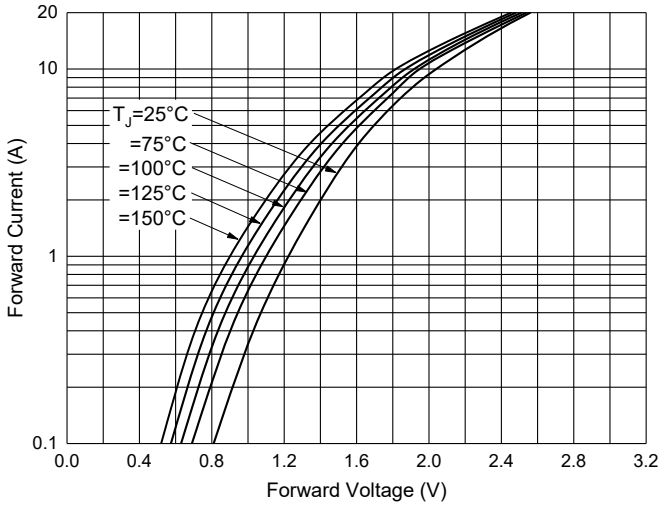


Fig. 4 - Typical Reverse Leakage Characteristics

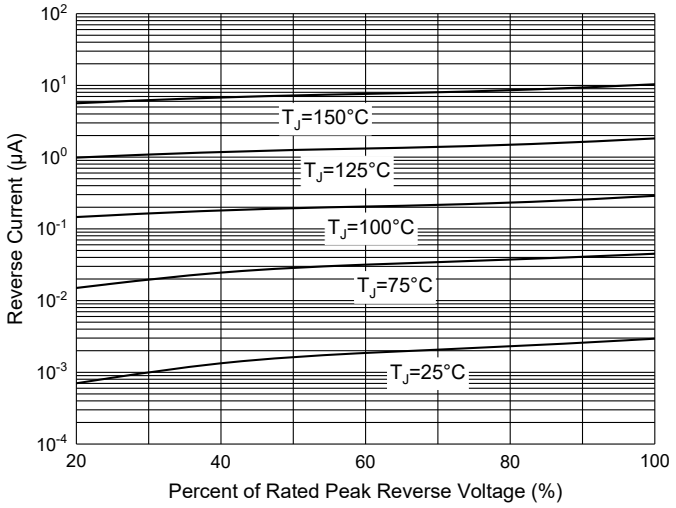
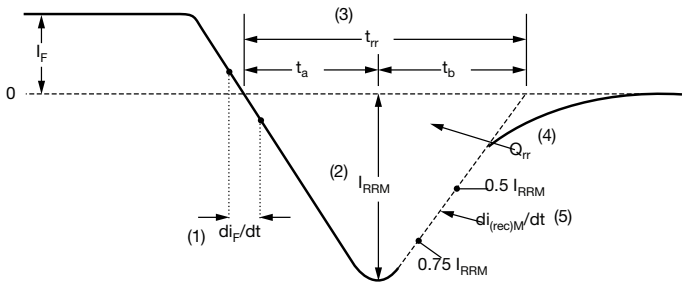


Fig. 5 - Reverse Recovery Waveform and Definitions



(1) di_F/dt - rate of change of current through zero crossing

(2) I_{RRM} - peak reverse recovery current

(3) t_{rr} - reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through 0.75 I_{RRM} and 0.50 I_{RRM} extrapolated to zero current.

(4) Q_{rr} - area under curve defined by t_{rr} and I_{RRM}

$$Q_{rr} = \frac{t_{rr} \times I_{RRM}}{2}$$

(5) $di_{(rec)M}/dt$ - peak rate of change of current during t_b portion of t_{rr}

Ordering Information

Device	Packing
MURSD8120A-TP	Tape&Reel: 2.5Kpcs/Reel