15A SUPER FAST BARRIER RECTIFIER

MUR1505 THRU MUR1560

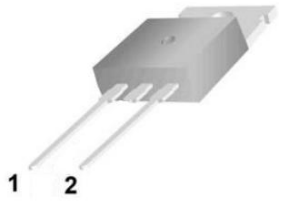
VOLTAGE RANGE 100 to 600 Volts
CURRENT 15.0 Ampere

Features

TO-220AC

RoHS COMPLIANT

- Low power loss, high efficiency,High surge capacit
- For use in low voltage, high frequency inverters
- Metal silicon junction, majority carrier conduction
- High current Capability, low forward voltage drop
- Guard ring for over voltage protection



Mechanical Data

- Case: TO-220AC molded plastic over glass passivated chip
- Case: Copper ase plate & Plastic Shell
- Molding compound meets UL 94 V-0 flammability rating, Halogen-free, RoHS-compliant, and commercial grade
- Weight: 0.08ounce, 2.24 gram

Maximum Ratings and Electrical Characteristics

- Ratings at 25℃ ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER		SYMBOLS	MUR 1505	MUR 1510	MUR 1520	MUR 1530	MUR 1540	MUR 1560	UNIT
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	100	150	200	300	400	600	Volts
Maximum RMS Voltage		V_{RMS}	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage		V_{DC}	100	100	200	300	400	600	Volts
Maximum Average Forward Rectified Current 0.375"(9.5mm) lead length at T_A=100℃		$I_{(AV)}$	15						Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)		I_{FSM}	200						Amps
Maximum Instantaneous Forward Voltage at 15A		V_F	0.95			1.25		1.70	Volts
Maximum DC Reverse Current at rated DC blocking Voltage at	T_A = 25℃	I_R	5.0						μA
	T_A = 125℃		50						
Maximum Reverse Recovery Time (NOTE 1)		T_{RR}	35			50			nS
Typical Junction Capacitance (NOTE 2)		C_J	62						pF
Typical Thermal Resistance (NOTE 3)		$R_{\theta JA}$	1.4						℃/W
Operating Junction Temperature Range		T_J	(-55 to +150)						℃
Storage Temperature Range		T_{STG}	(-55 to +150)						℃

Notes:

1. Reverse Recovery Test Conditions:If=0.5A,Ir=1.0A,Irr=0.25A.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
3. Unit mounted on P.C.B. with 0.033"×0.043"(1.00mm×1.30mm) copper pads.

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Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

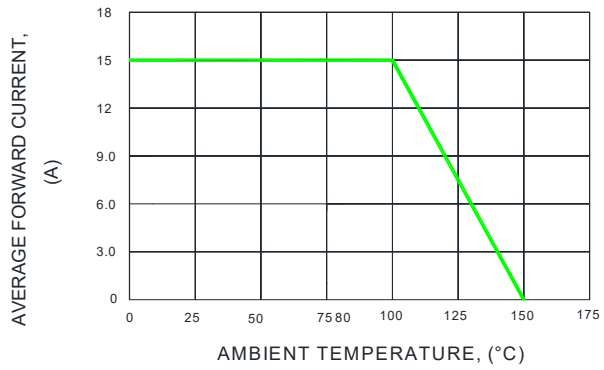


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

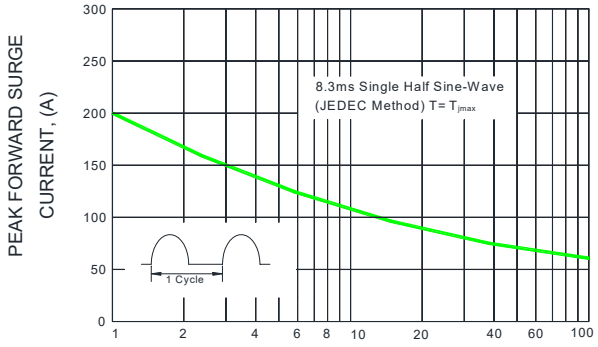


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

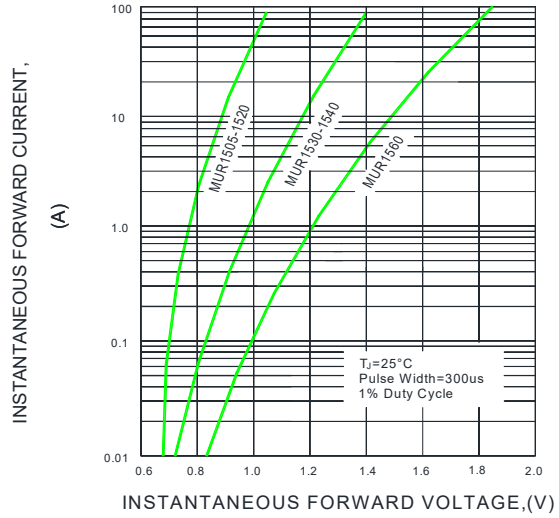


FIG.4-TYPICAL REVERSE CHARACTERISTICS

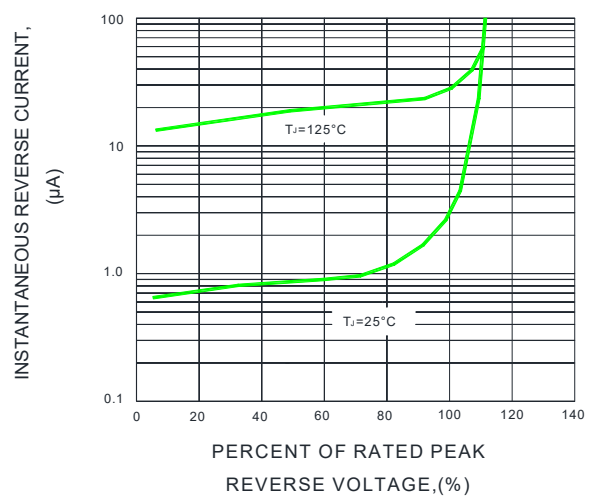
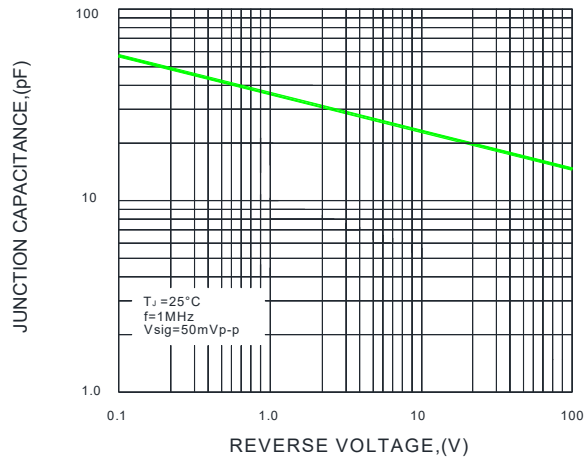
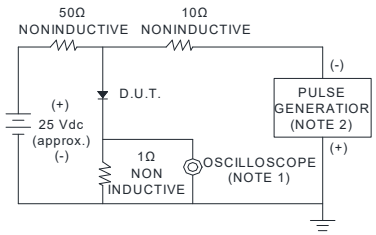
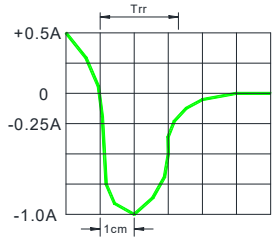


FIG.5-TYPICAL JUNCTION CAPACITANCE



F1G.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC





NOTES : 1.Rise Time=7ns mas. Input Impedance= 1 magohm. 22pF
2.Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm

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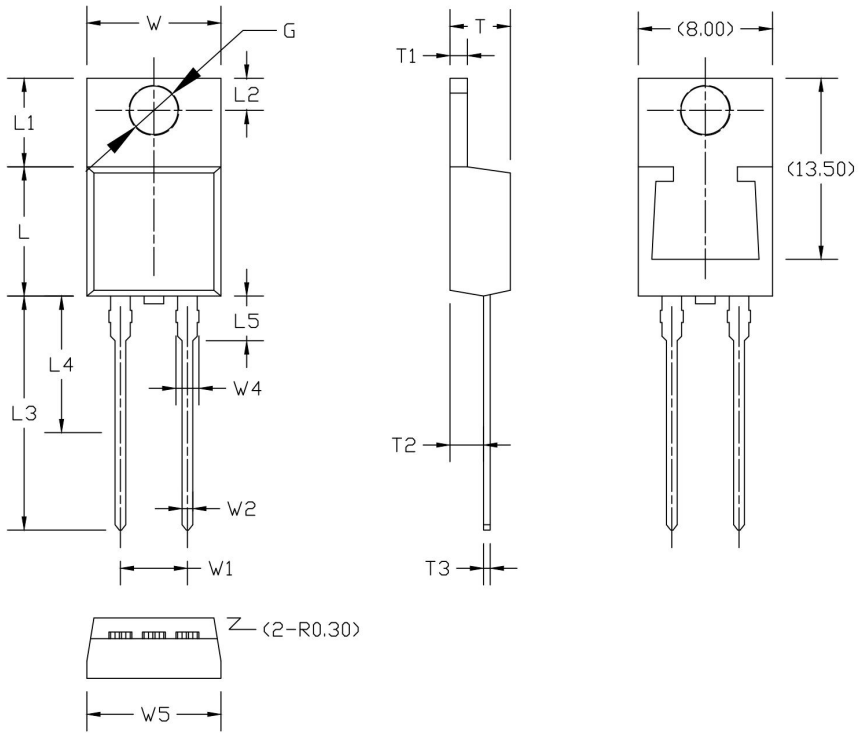
Package Outline Dimensions millimeters



Symbol	Size		Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max		Min	Max
W	9.66	10.28	L	8.30	9.00	L5	3.69	4.10	G(Φ)	3.70	3.90
W1	5.08（TYP）		L1	6.10	6.60	T	4.30	4.70			
W2	0.70	0.95	L2	2.70	2.90	T1	1.15	1.40			
W3	1.17	1.37	L3	12.70	14.27	T2	2.20	2.80			
W4*	1.32	1.72	L4	6.60	7.10	T3	0.35	0.45			

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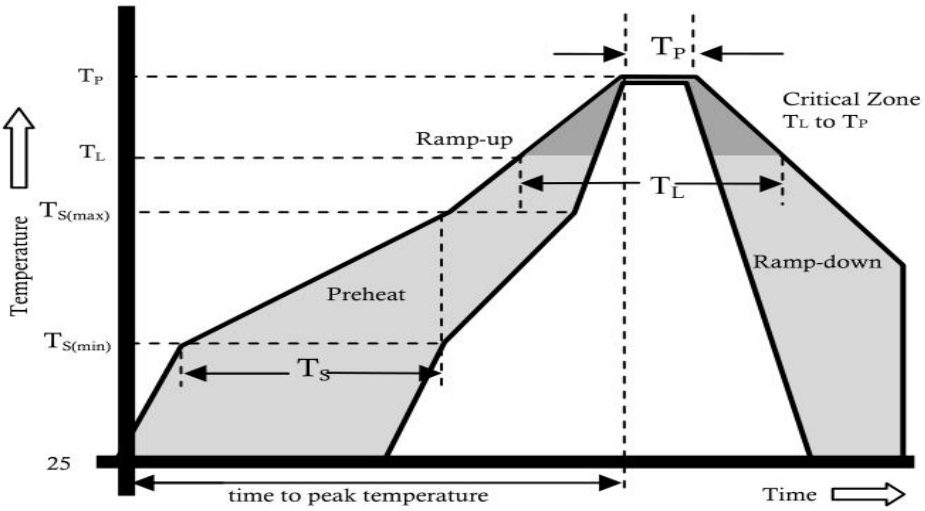
Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(TL) to peak)		3°C/sec. Max.
TS(max) to TL - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (TL)(Liquidus)	+217°C
	Temperature (TL)	60-150 secs.
Peak Temp (TP)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (TP)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (TP)		8 min. Max.
Do not exceed		+260°C

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