



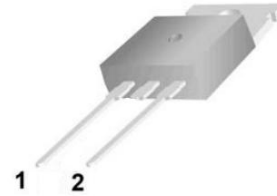
UF1501 THRU UF1506

VOLTAGE RANGE	100 to 600 Volts
CURRENT	15.0 Ampere

Features

- Low power loss, high efficiency, High surge capacity
- 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

TO-220AC



Mechanical Data

- Case: TO-220AC molded plastic over glass passivated chip
- Case: Copper base 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°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER	SYMBOLS	UF 1501	UF 1502	UF 1503	UF 1504	UF 1506	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	200	300	400	600	Volts
Maximum RMS Voltage	V_{RMS}	70	140	210	280	420	Volts
Maximum DC Blocking Voltage	V_{DC}	100	200	300	400	600	Volts
Maximum Average Forward Rectified Current 0.375"(9.5mm) lead length at $T_A=100^\circ\text{C}$	$I_{(AV)}$	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	$T_A = 25^\circ\text{C}$	5.0					μA
	$T_A = 125^\circ\text{C}$	50					
Maximum Reverse Recovery Time ^(NOTE 1)	T_{RR}	35					nS
Typical Junction Capacitance ^(NOTE 2)	C_j	62					pF
Typical Thermal Resistance ^(NOTE 3)	$R_{\theta JA}$	2.6					$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_J	-55 to +175					$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +175					$^\circ\text{C}$

Notes:

1. Reverse Recovery Test Conditions: $I_f=0.5\text{A}$, $I_r=1.0\text{A}$, $I_{rr}=0.25\text{A}$.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
3. Unit mounted on P.C.B. with $0.033" \times 0.043"$ (1.00mm \times 1.30mm) copper pads.



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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

FIG.1—TYPICAL FORWARD CURRENT DERATING CURVE

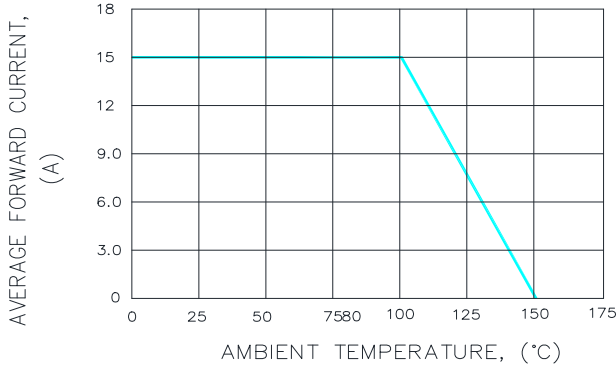


FIG.2—MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

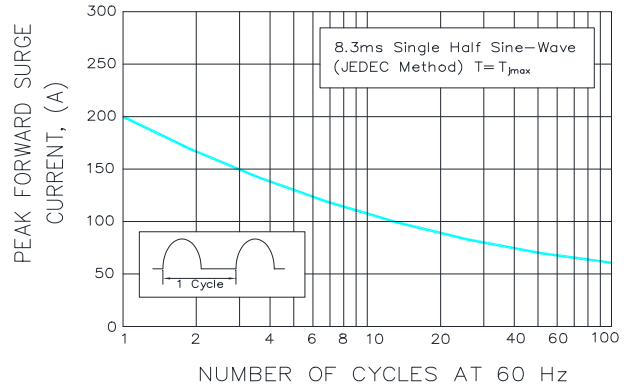


FIG.3—TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

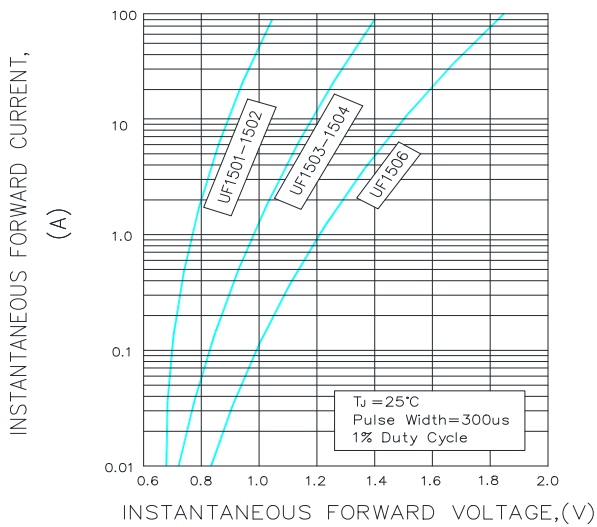


FIG.4—TYPICAL REVERSE CHARACTERISTICS

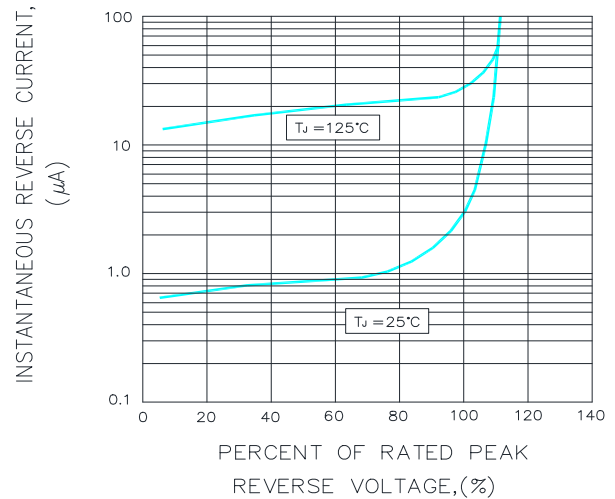


FIG.5—TYPICAL JUNCTION CAPACITANCE

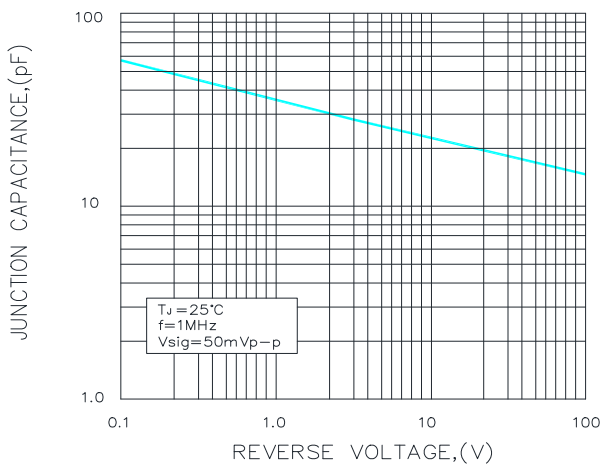
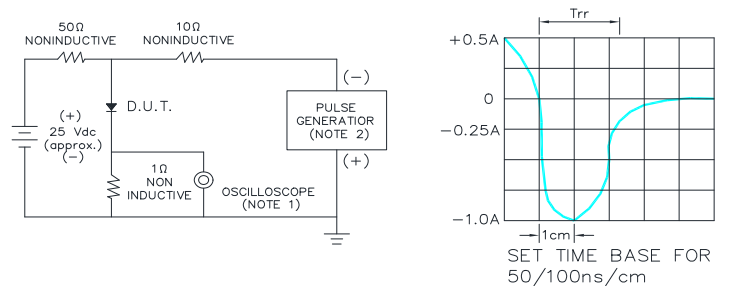


FIG.6—TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

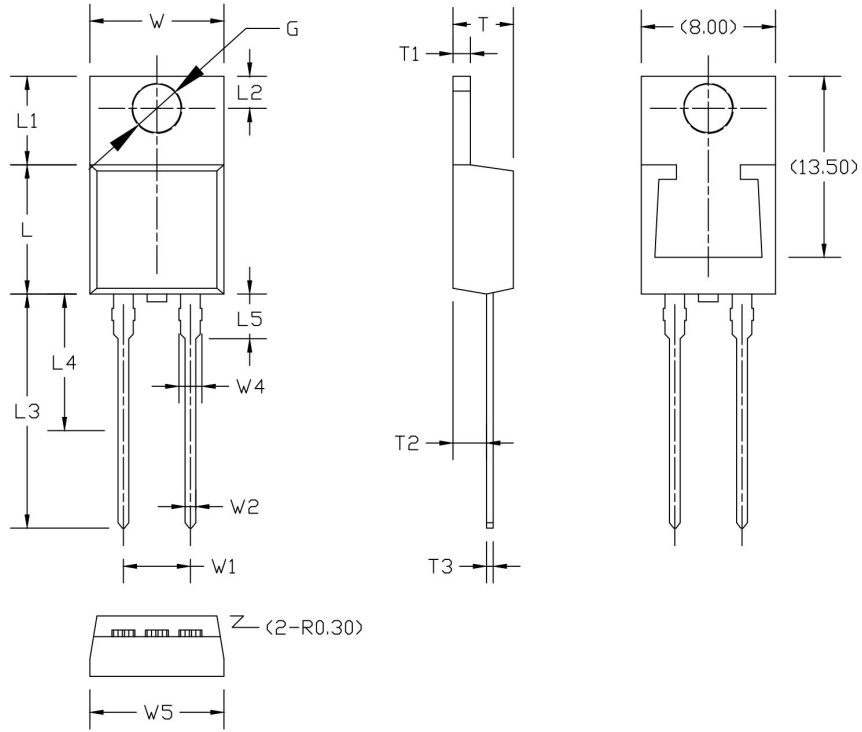


15A SUPER FAST BARRIER RECTIFIER

VOLTAGE RANGE 100 to 600 Volts
CURRENT 15.0 Ampere

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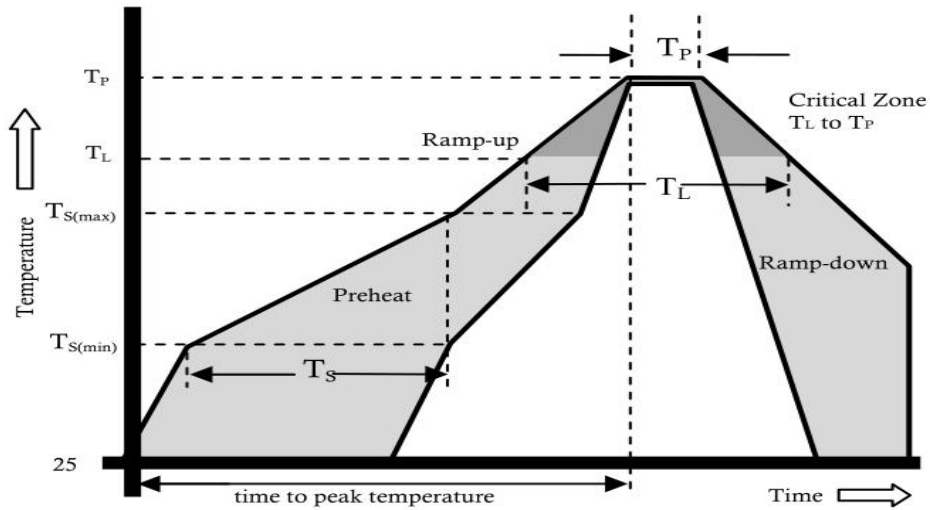
Package Outline Dimensions millimeters



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			



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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