

MUR1080FCT

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Tube packing.....	4
Suggested thermal profiles for soldering processes.....	5
High reliability test capabilities.....	6

MUR1080FCT

10.0A Super Fast Recovery Rectifiers - 800V

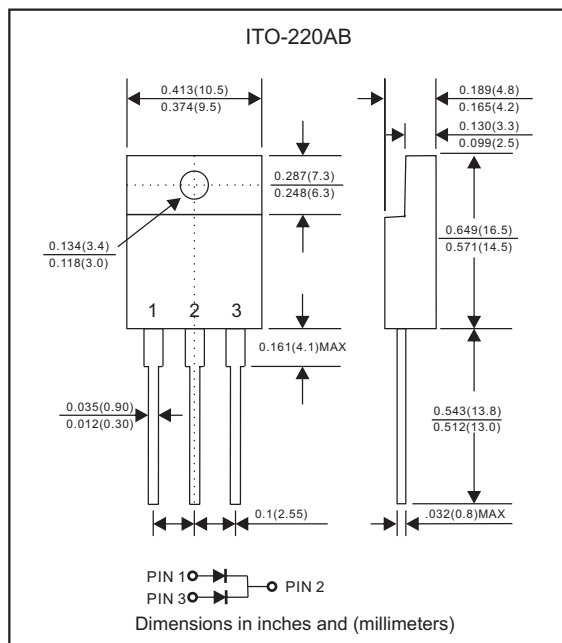
Features

- Low forward voltage, high current capability
- High surge current capability.
- Super fast recovery time for switching mode application.
- Low power loss.
- Glass passivated chip junctions.
- Lead-free parts meet environmental standards of MIL-STD-19500/228

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC ITO-220AB molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- Mounting Position : Any
- Weight : Approximated 1.70 gram

Package outline



Maximum ratings (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MUR1080FCT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	800	V
Maximum RMS voltage	V_{RMS}	560	V
Maximum DC blocking voltage	V_{DC}	800	V
Maximum average forward rectified current	I_o	10	A
Peak forward surge current 8.3ms single half sine-wave(JEDEC method)	I_{FSM}	125	A
Operating junction temperature range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +175	$^{\circ}\text{C}$

Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MUR1080FCT	UNIT
Maximum forward voltage at $I_F=5\text{A}$	V_F	1.85	V
Maximum reverse recovery time per leg (Note 1)	t_{rr}	75	ns
Maximum DC reverse current at $T_J=25^{\circ}\text{C}$ at rated DC blocking voltage per leg at $T_J=125^{\circ}\text{C}$	I_R	5.0 250	μA μA

Thermal Characteristics

PARAMETER	SYMBOLS	MUR1080FCT	UNIT
Typical thermal resistance junction to case per leg	$R_{\theta JC}$	4.0	$^{\circ}\text{C}/\text{W}$
Power Dissipation $T_c = 25^{\circ}\text{C}$	P_d	32	W

Note 1: Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

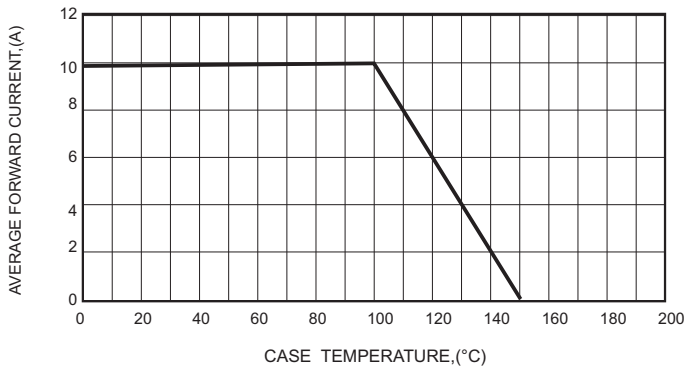


FIG.2-TYPICAL FORWARD CHARACTERISTICS

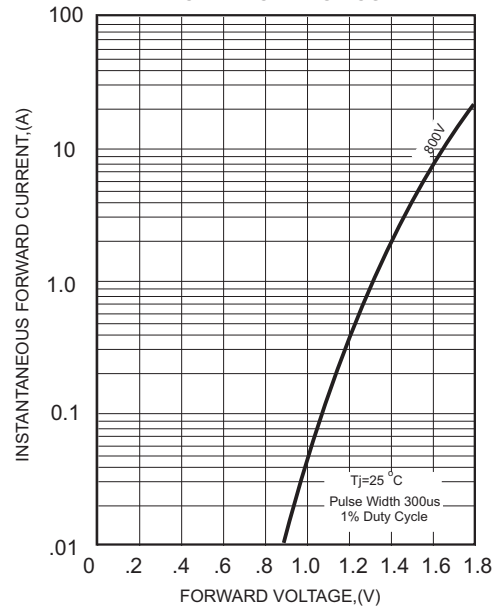


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

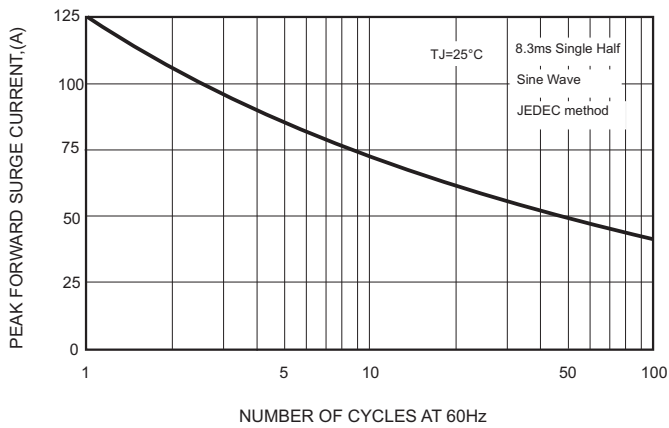


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

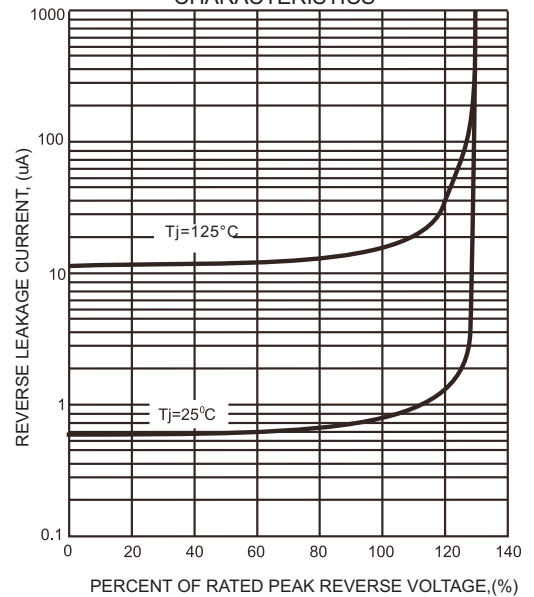
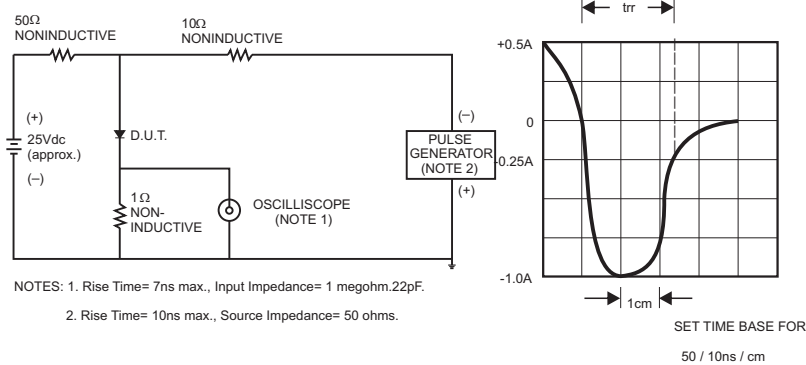
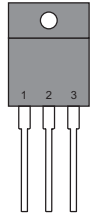
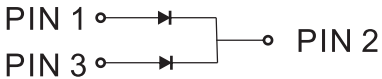


FIG.5- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



MUR1080FCT

Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

Marking

Type number	Marking code
MUR1080FCT	MUR1080FCT

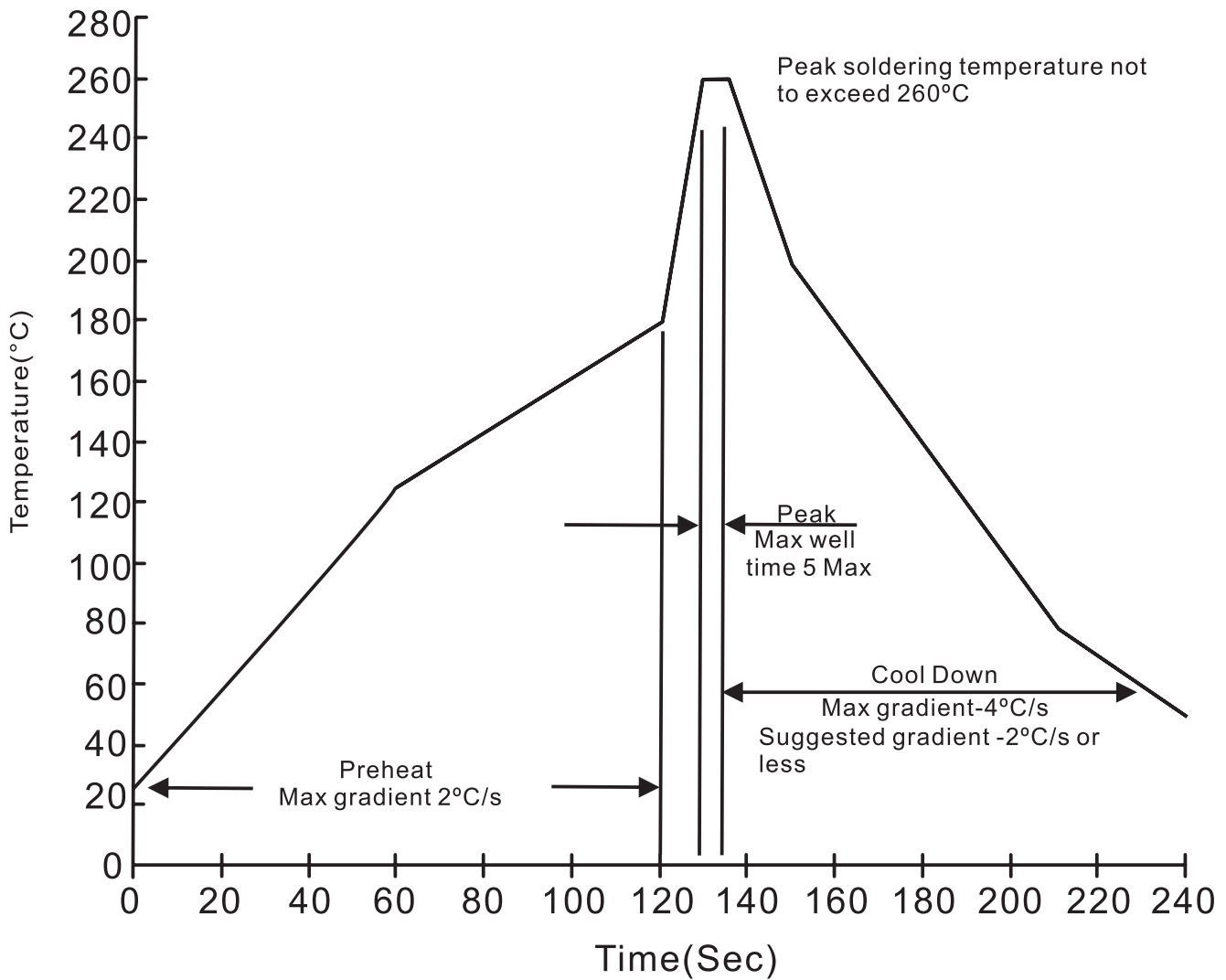
Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
ITO-220AB	50	525*32*7.0	1000	555*150*40	580*230*175	5,000	15.0

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Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



MUR1080FCT

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec.}$ immerse body into solder $1/16''\pm 1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A=25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031