

# MUR810 THRU MUR860

## 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

# MUR810 THRU MUR860

## 8.0A Super Fast Recovery Rectifiers - 50V-600V

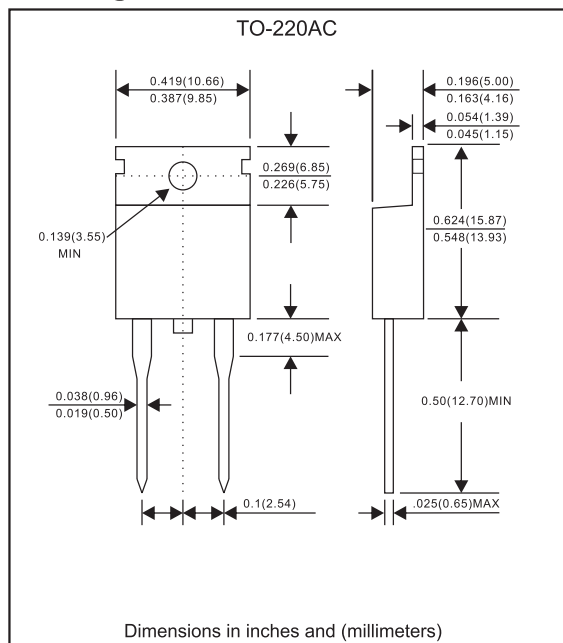
### Features

- 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 TO-220AC 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 2.05 gram

### Package outline



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

PARAMETER	SYMBOLS	MUR810	MUR820	MUR840	MUR860	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	100	200	400	600	V
Maximum RMS voltage	V <sub>RMS</sub>	70	140	280	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	100	200	400	600	V
Maximum average forward rectified current	I <sub>O</sub>	8				A
Peak forward surge current 8.3ms single half sine-wave(JEDEC method)	I <sub>FSM</sub>	100				A
Operating junction temperature range	T <sub>J</sub>	-55 to +150				°C
Storage temperature range	T <sub>STG</sub>	-65 to +175				°C

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

PARAMETER	SYMBOLS	MUR810	MUR820	MUR840	MUR860	UNIT
Maximum forward voltage at IF=8A	V <sub>F</sub>	0.98		1.30	1.70	V
Maximum reverse recovery time per leg (Note 1)	t <sub>rr</sub>	35			50	ns
Maximum DC reverse current at T <sub>J</sub> =25°C at rated DC blocking voltage per leg at T <sub>J</sub> =125°C	I <sub>R</sub>	5.0			250	uA uA

### Thermal Characteristics

PARAMETER	SYMBOLS	MUR810	MUR820	MUR840	MUR860	UNIT
Typical thermal resistance junction to case per leg	R <sub>θJC</sub>	2.5				°C/W

Note 1: Reverse recovery time test condition, I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

# Rating and characteristic curves (MUR810 THRU MUR860)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

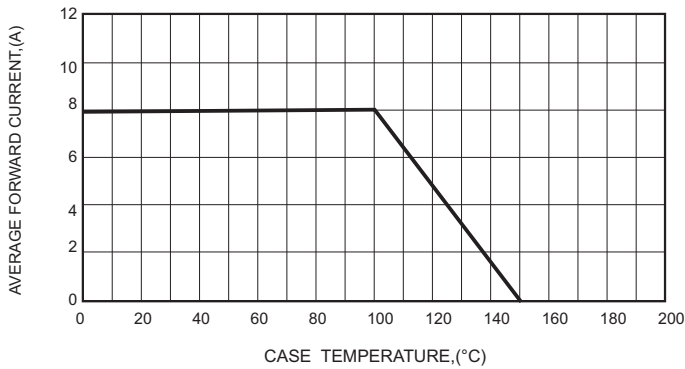


FIG.2-TYPICAL FORWARD CHARACTERISTICS

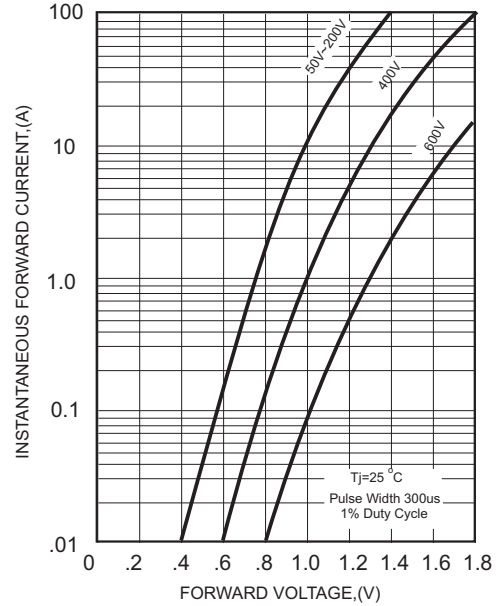


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

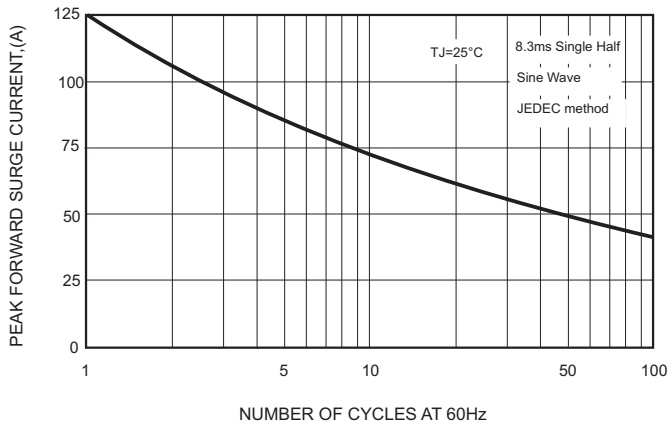


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

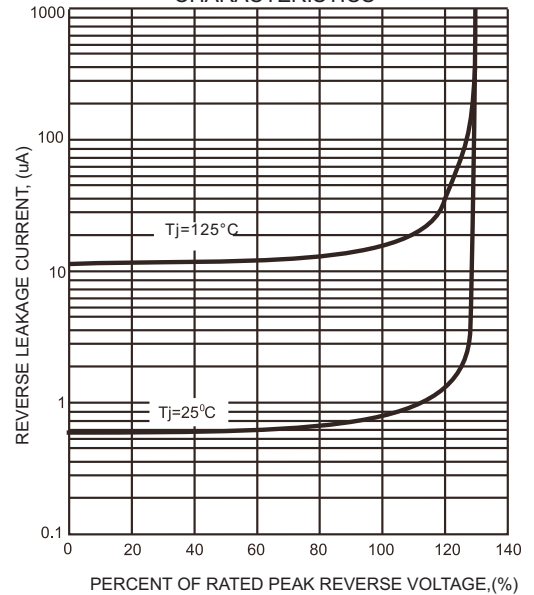
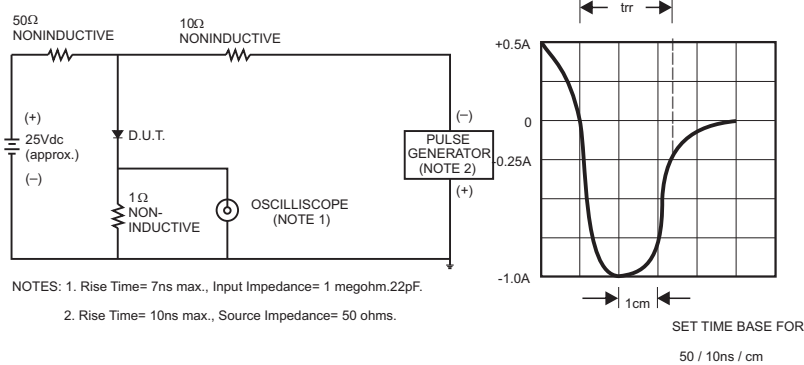
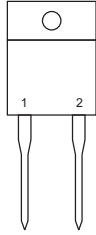
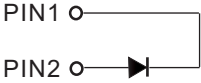


FIG.5- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



# MUR810 THRU MUR860

## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

## Marking

Type number	Marking code
MUR810	MUR810
MUR820	MUR820
MUR840	MUR840
MUR860	MUR860

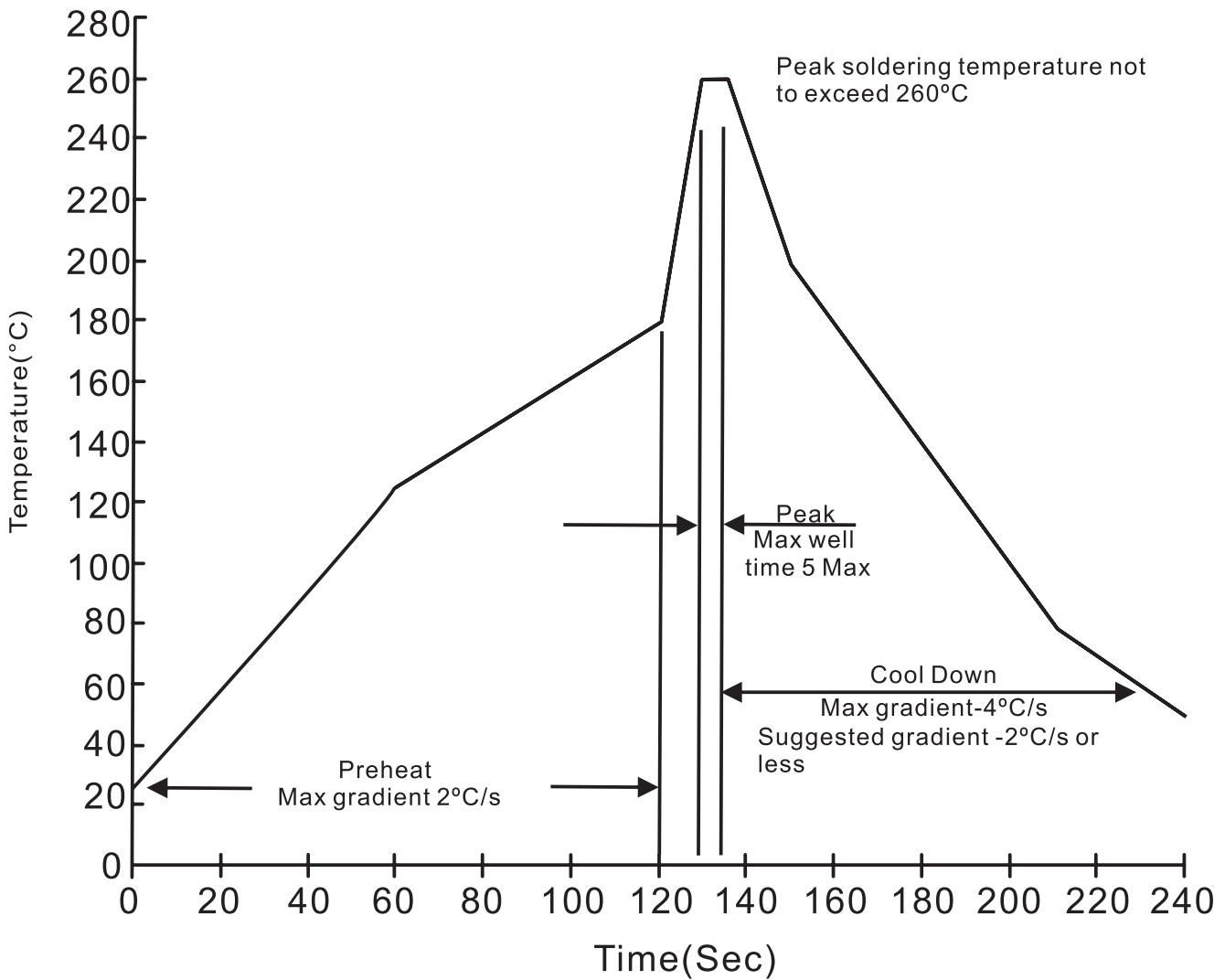
## Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
TO-220AC	50	525*32*7.5	1000	555*150*40	580*230*175	5,000	15.0

# MUR810 THRU MUR860

## Suggested thermal profiles for soldering processes

### 1. Lead free temperature profile wave-soldering



**MUR810 THRU MUR860****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	$-55^{\circ}\text{C}$ 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 $175^{\circ}\text{C}$ for 1000 hrs.	MIL-STD-750D METHOD-1031