

■ **FEATURES**

- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

■ **TYPICAL APPLICATIONS**

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

■ **MECHANICAL DATA**

- **Package:** TO-263  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

■ **MAXIMUM RATINGS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified )

PARAMETER	SYMBOL	UNIT	MURB1040CT
Device marking code			MURB1040CT
Repetitive Peak Reverse Voltage	$V_{RRM}$	V	400
Average Rectified Output Current @60Hz sine wave, R-load, $T_c$ (FIG.1)	$I_o$	A	10
Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^{\circ}\text{C}$	$I_{FSM}$	A	50
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ $T_j=25^{\circ}\text{C}$ ,	$I^2t$	$\text{A}^2\text{s}$	10
Storage Temperature	$T_{stg}$	$^{\circ}\text{C}$	-55 ~ +175
Junction Temperature	$T_j$	$^{\circ}\text{C}$	-55 ~ +175
Typical Junction capacitance @4V,1MHz	$C_j$	$\text{pF}$	50

■ **THERMAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified )

PARAMETER	SYMBOL	UNIT	MURB1040CT
Thermal Resistance Between junction and case	$R_{\theta J-C}$	$^{\circ}\text{C/W}$	2.0
Thermal Resistance Between junction and Air	$R_{\theta J-A}$	$^{\circ}\text{C/W}$	50

■ **PACKAGING INFORMATION**

PREFERED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURB1040CT	Approximate 1.43	50	2000	8000	Tube
MURB1040CT	Approximate 1.43	1000	2000	10000	Reel

■ **ELECTRICAL CHARACTERISTICS** ( $T_a=25^{\circ}\text{C}$  Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	$V_{FM}$	V	$I_{FM}=5.0\text{A}$ @ $T_j=25^{\circ}\text{C}$	-	1.15	1.30
			$I_{FM}=5.0\text{A}$ @ $T_j=150^{\circ}\text{C}$	-	0.9	1.0
DC reverse current at rated DC blocking voltage per diode	$I_{RRM1}$	uA	$V_{RM}=V_{RRM}$ $T_j=25^{\circ}\text{C}$	-	-	5.0
	$I_{RRM2}$		$V_{RM}=V_{RRM}$ $T_j=150^{\circ}\text{C}$	-	25	100
Reverse Recovery Time	$T_{rr}$	ns	$I_F=0.5\text{A}$ $I_{RM}=1\text{A}$ $I_{RR}=0.25\text{A}$ $T_j=25^{\circ}\text{C}$	-	25	35
			$T_j=25^{\circ}\text{C}$	-	29.5	-
			$T_j=125^{\circ}\text{C}$	-	46.6	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}\text{C}$	-	3.49	-
			$T_j=125^{\circ}\text{C}$	-	5.71	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}\text{C}$	-	55.22	-
			$T_j=125^{\circ}\text{C}$	-	130	-

■ **CHARACTERISTICS (TYPICAL)**

FIG1:  $I_o$  - $T_c$  Curve

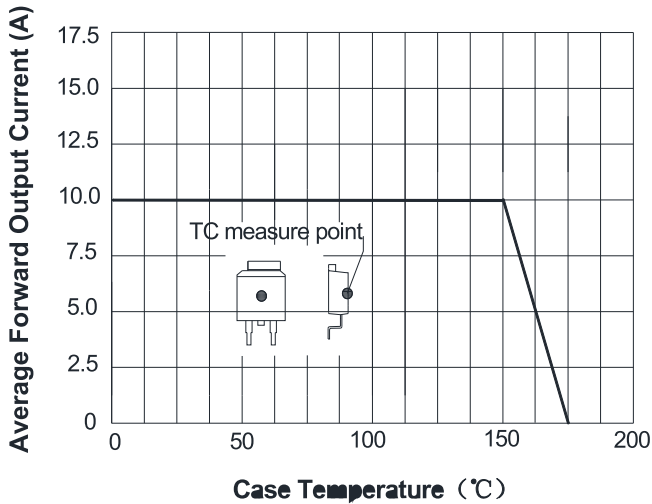


FIG2: Surge Forward Current Capability

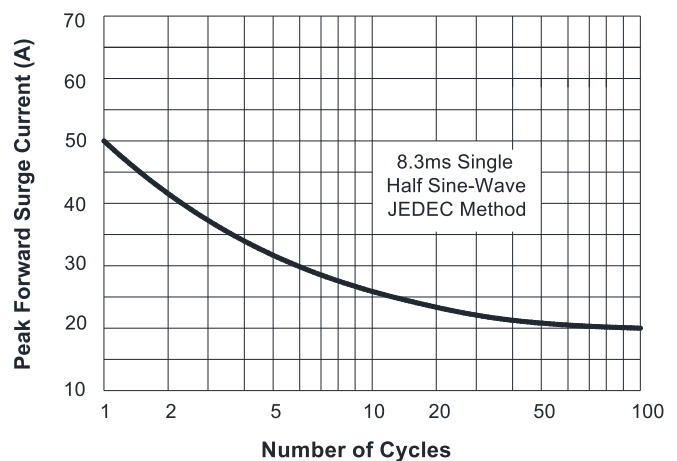


FIG3: Forward Voltage

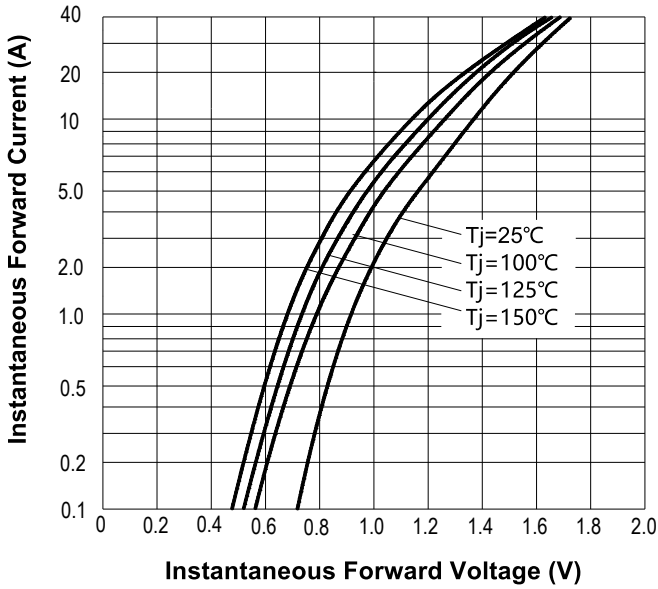


FIG.4: Instantaneous Reverse Characteristics

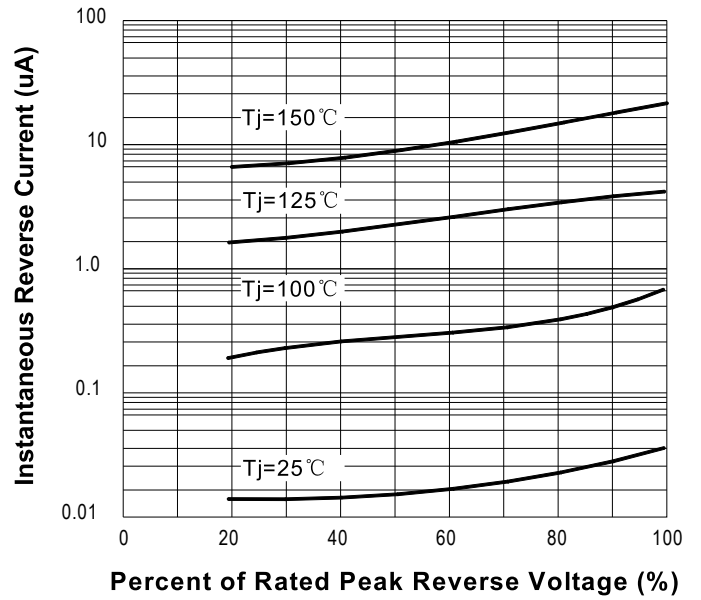
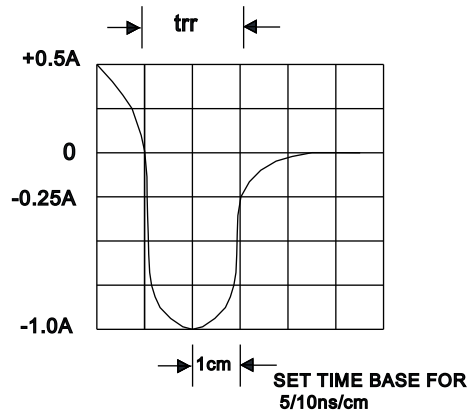
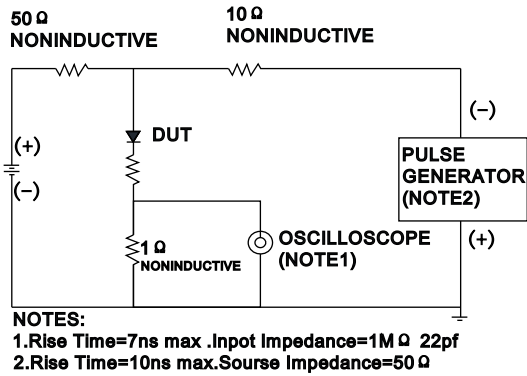
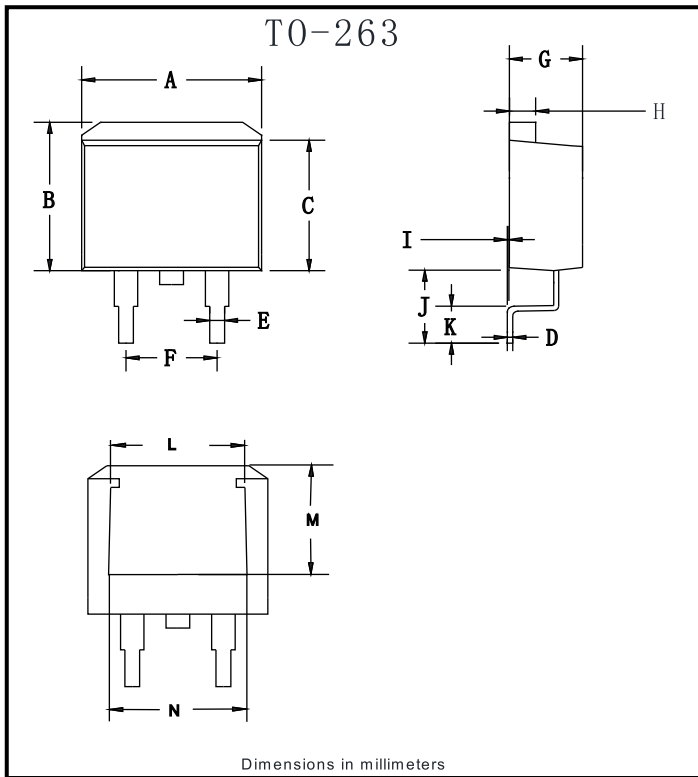


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

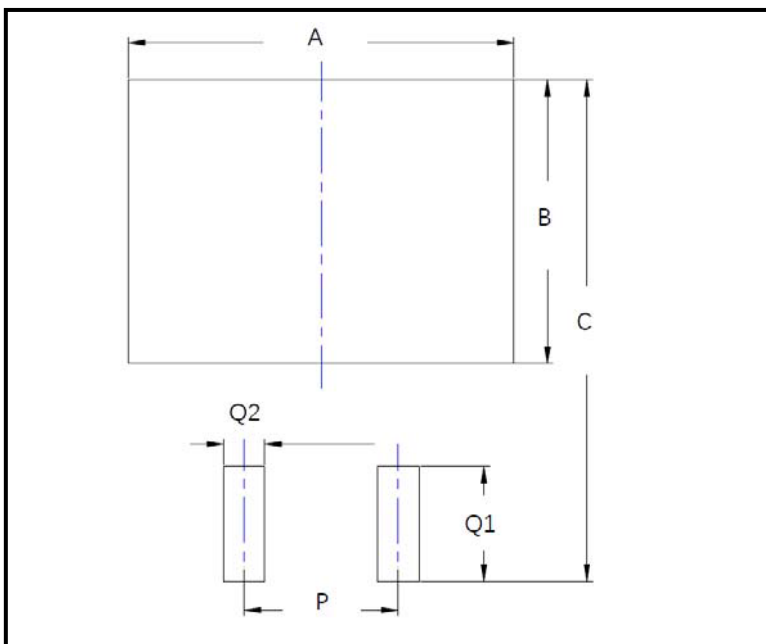


■ **OUTLINE DIMENSIONS**



TO-263		
Dim	Min	Max
A	9.5	11.5
B	9.7	10.5
C	8.4	9.0
D	0.28	0.64
E	0.68	0.94
F	4.55	5.6
G	4.04	5.10
H	1.14	1.4
I	0	0.2
J	4.9	6.05
K	1.79	2.79
L	7.3	7.9
M	6.2	6.8
N	7.6	8.2

■ **SUGGESTED PAD LAYOUT**



Dim	Millimeters
A	12.7
B	9.4
C	16.6
P	5.08
Q1	3.8
Q2	1.35