

TO- 277 Plastic-Encapsulate Diodes

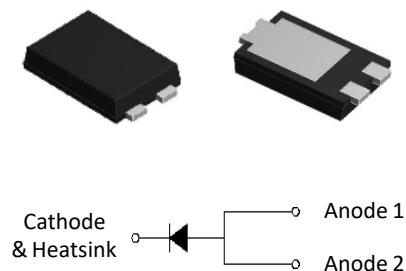
SUPER FAST RECOVER RECTIFIER MAIN CHARACTERISTICS

Features:

- Ultrafast 35ns Recovery Times
- High Voltage Capability to 400V
- Low Reverse Leakage Current

I_O	10A
V_{RRM}	400V
T_j	150 °C
$V_{F(typ)}$	1.0V (@ $T_j=125^\circ\text{C}$)

TO-277



Marking

- MUR1040

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	KMUR	Unit
		1040	
Peak repetitive reverse voltage	V_{RRM}	400	V
Working peak reverse voltage	V_{RWM}		
DC blocking voltage	V_R		
RMS reverse voltage	$V_{R(RMS)}$	280	V
Average rectified output current@ Total device	I_O	10	A
Non-Repetitive peak forward surge current 8.3ms half sine wave	I_{FSM}	150	A
Typical thermal resistance	$R_{\theta JC}$	4.5	°C/W
Thermal resistance from junction to ambient	$R_{\theta JA}$	62.5	
Operating Junction Temperature Range	T_j	-55 ~ +150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Reverse voltage	$V_{(BR)}$	$I_R=100\mu\text{A}$	400			V	
Reverse current	I_R	$V_R=400\text{V}$	$T_j=25^\circ\text{C}$		0.5	2	μA
			$T_j=125^\circ\text{C}$		2.0		μA
Forward voltage	V_F	$I_F=10.0\text{A}$	$T_j=25^\circ\text{C}$		1.04	1.25	V
			$T_j=125^\circ\text{C}$			1.00	V
Typical total capacitance	C_{tot}	$V_R=4.0\text{V}, f=1\text{MHz}$		14		pF	
Reverse recovery time	t_{rr}	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$			35	ns	

Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

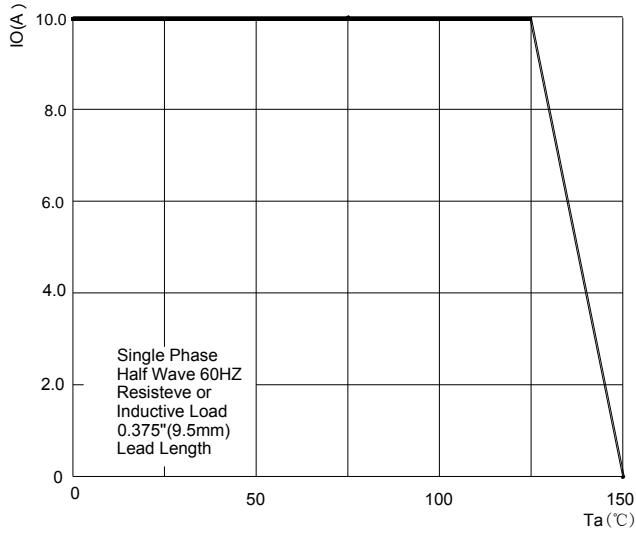
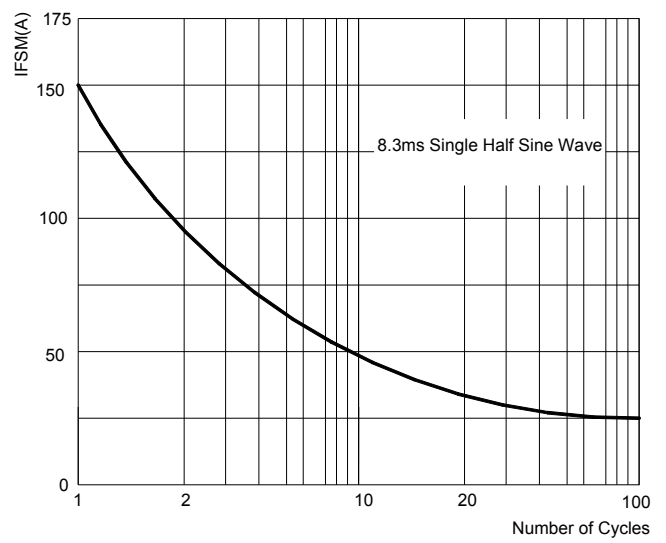


FIG.2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



TYPICAL FORWARD CHARACTERISTICS

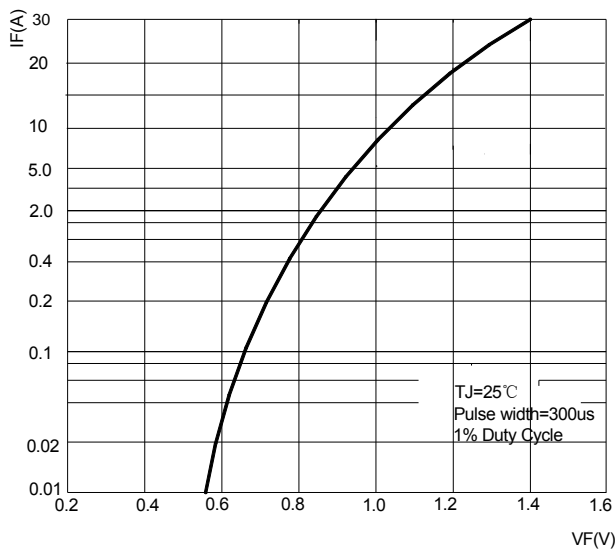


FIG.4: TYPICAL REVERSE CHARACTERISTICS

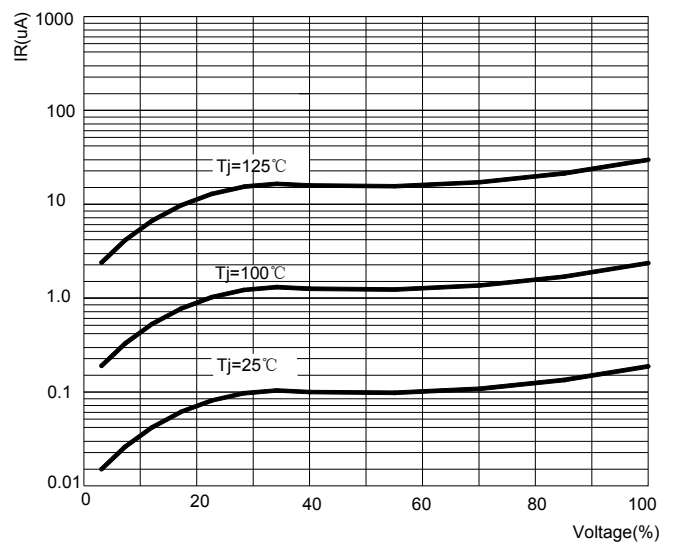
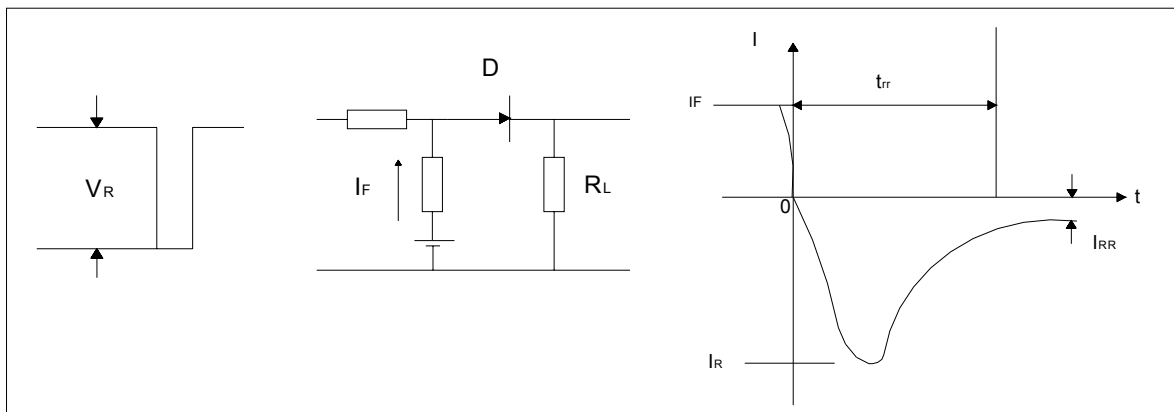
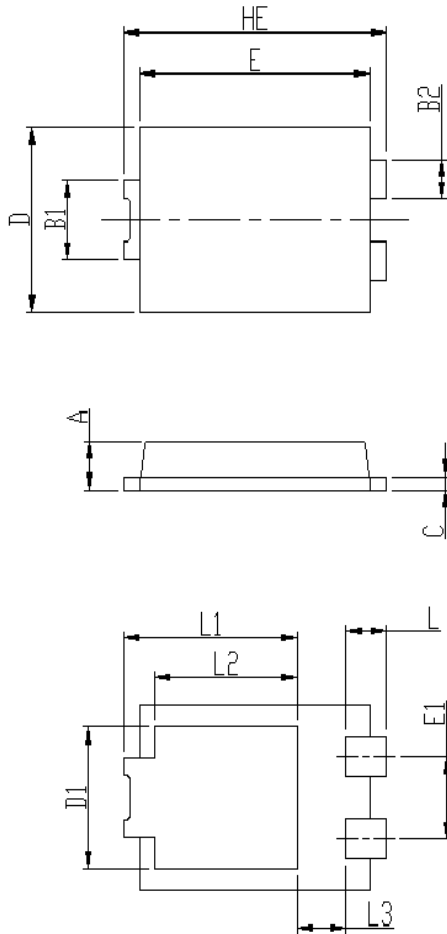


FIG.7: Diagram of circuit and Testing wave form of reverse recovery time

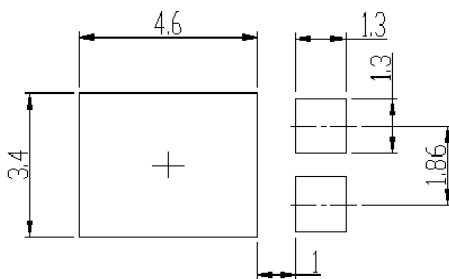


TO- 277 Package Outline Dimensions



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
HE	6.4	6.6	0.252	0.260
E	5.6	5.8	0.220	0.228
D	4.	4.	0. 61	0. 69
B1	1.7	1.9	0.067	0.075
B2	0.8	1	0.031	0.039
A	1.05	1.2	0.041	0.047
C	0.3	0.4	0.012	0.016
L	0.85	1.1	0.033	0.043
L1	4.2	4.4	0.165	0.173
L2	3.52 Typ.		0.139 Typ.	
L3	1.1	1.4	0.043	0.055
D1	3	3.3	0.118	0.130
E1	1.86 Typ.		0.073 Typ.	

TO- 277 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.