

TO-220AC Ultra-Fast Recovery Rectifier Diodes

Features

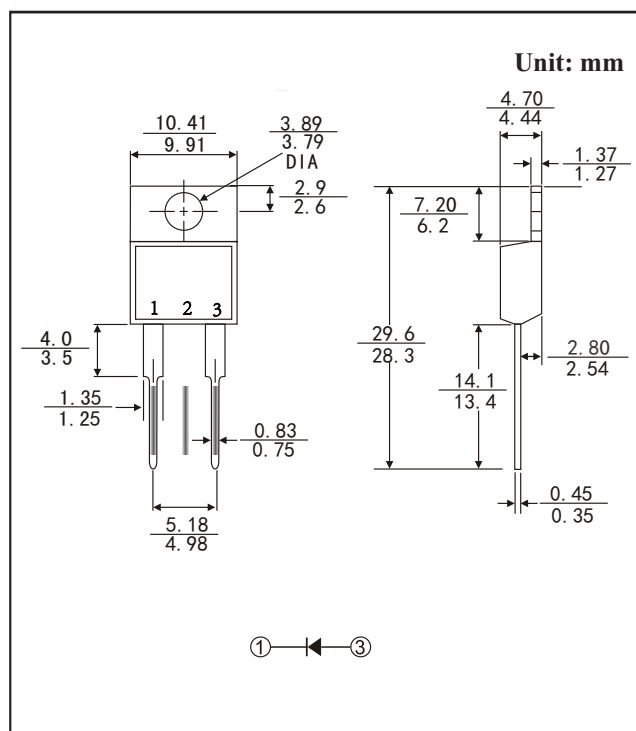
- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

Typical Applications

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

Mechanical Data

- **Package:** TO-220AC
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

PARAMETER	SYMBOL	UNIT	MUR8120
Device marking code			MUR8120
Repetitive Peak Reverse Voltage	V_{RRM}	V	1200
Average Rectified Output Current @60Hz sine wave, R-load, T_c (FIG.1)	I_O	A	8
Surge(Non-repetitive) Forward Current @60Hz half sine-wave, 1 cycle, $T_j=25^\circ\text{C}$	I_{FSM}	A	80
Current Squared Time @1ms≤t≤8.3ms $T_j=25^\circ\text{C}$	I^2t	A ² s	14.94
Storage Temperature	T_{stg}	°C	-55 ~ +150
Junction Temperature	T_j	°C	-55 ~ +150
Junction capacitance @4V, 1MHz	C_j	pF	26

■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	$I_{FM}=8.0A$ @ $T_J=25^{\circ}C$	-	2.00	2.40
			$I_{FM}=8.0A$ @ $T_J=125^{\circ}C$		1.70	2.20
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	$V_{RM}=V_{RRM}$ $T_J=25^{\circ}C$	-	-	5.0
	I_{RRM2}		$V_{RM}=V_{RRM}$ $T_J=125^{\circ}C$	-	-	200
Reverse Recovery Time	T_{rr}	ns	$I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_J=25^{\circ}C$	-	-	50
			$T_J=25^{\circ}C$	-	249	-
			$T_J=125^{\circ}C$	-	438	-
Peak recovery current	I_{RRM}	A	$T_J=25^{\circ}C$	-	5.18	-
			$T_J=125^{\circ}C$	-	7.32	-
Reverse recovery charge	Q_{rr}	nC	$T_J=25^{\circ}C$	-	645	-
			$T_J=125^{\circ}C$	-	1555	-

■Thermal Characteristics ($T_J=25^{\circ}C$ Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	MUR8120
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	$^{\circ}C/W$	0.7

■Characteristics (Typical)

FIG1: I_o - T_c Curve

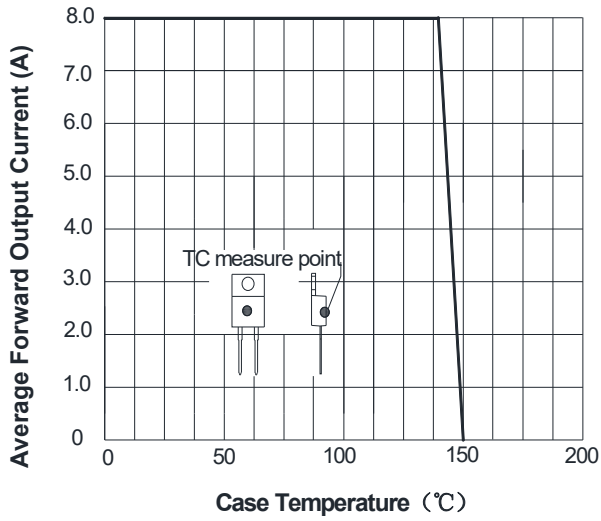


FIG2: Surge Forward Current Capability

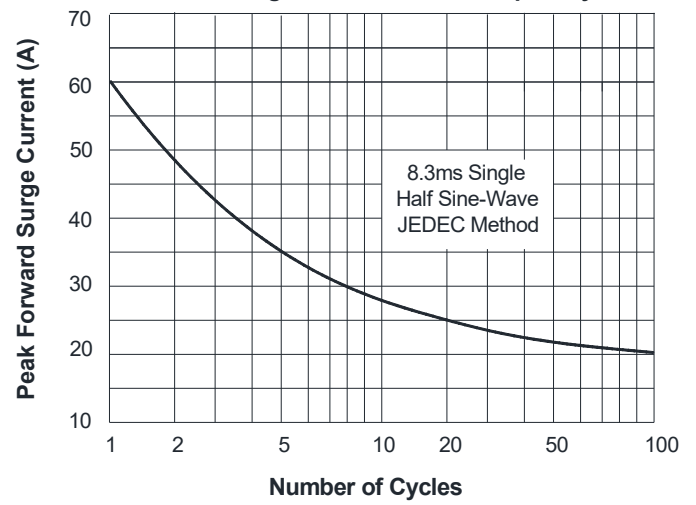


FIG3: Forward Voltage

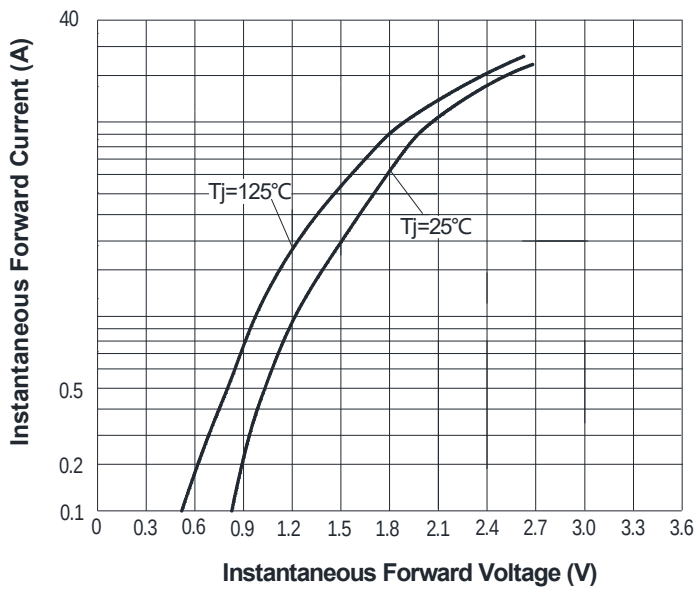


FIG4: Instantaneous Reverse Characteristics

