8A, 200V - 600V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High efficiency, Low V_F
- High current capability
- High reliability
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

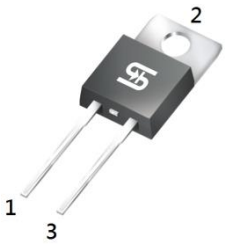
- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

- Case: TO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.80g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	8	A
V_{RRM}	200 - 600	V
I_{FSM}	100	A
$T_{J\ MAX}$	175	°C
Package	TO-220AC	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AC

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**MUR820**	**MUR840**	**MUR860**	**UNIT**
Marking code on the device		MUR820	MUR840	MUR860	
Repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	280	420	V
Forward current	I_F	8			A
Surge peak forward current 8.3ms single half sine wave superimposed on rated load	I_{FSM}	100			A
Junction temperature	T_J	-55 to +175			°C
Storage temperature	T_{STG}	-55 to +175			°C

THERMAL PERFORMANCE

PARAMETER		SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	MUR820	$R_{\Theta JC}$	3	°C/W
Junction-to-case thermal resistance	MUR840 MUR860	$R_{\Theta JC}$	2	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	MUR820	I_F = 8A, T_J = 25°C	V_F	-	0.975	V
	MUR840			-	1.300	V
	MUR860			-	1.700	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	5	μA
		T_J = 100°C		-	250	μA
Reverse recovery time	MUR820	I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	25	ns
	MUR840 MUR860			-	50	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
MUR8x	TO-220AC	50 / Tube
MUR8xH	TO-220AC	50 / Tube

Notes:

1. “x” defines voltage from 200V(MUR820) to 600V(MUR860)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

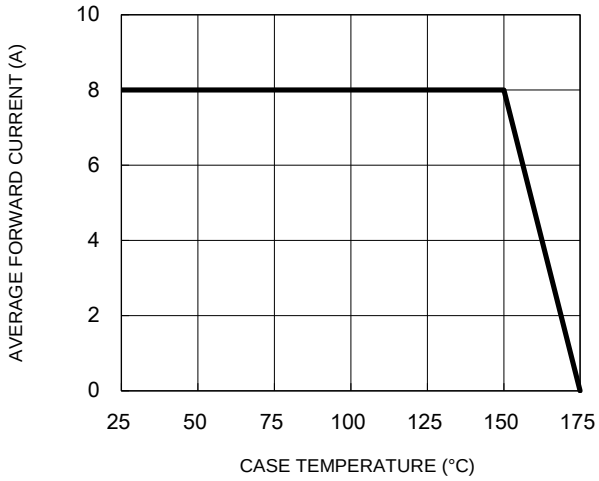


Fig.2 Typical Junction Capacitance

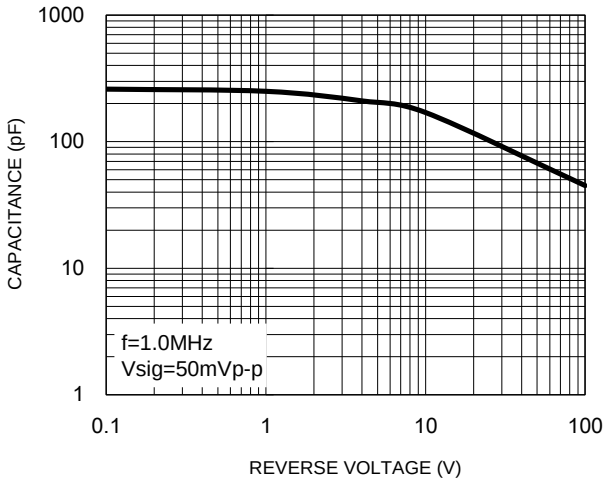


Fig.3 Typical Reverse Characteristics

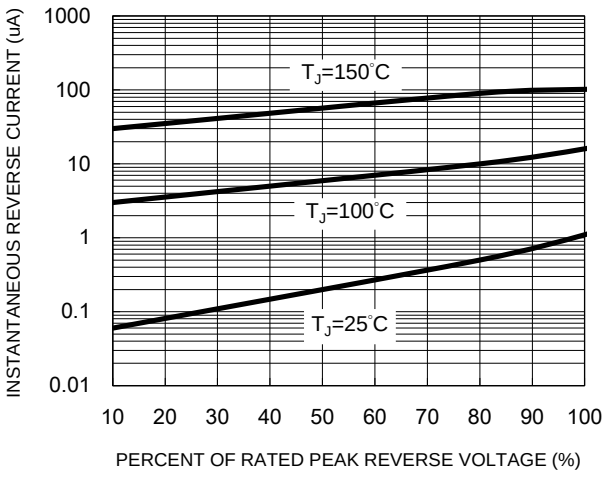


Fig.4 Typical Forward Characteristics

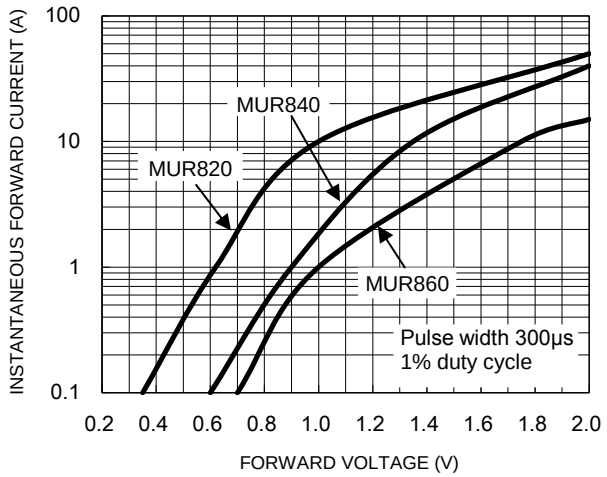
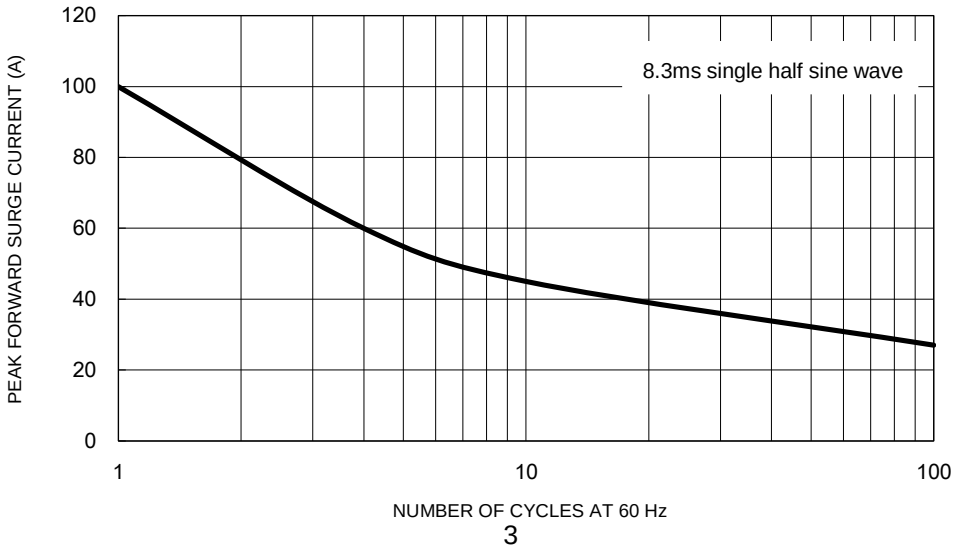


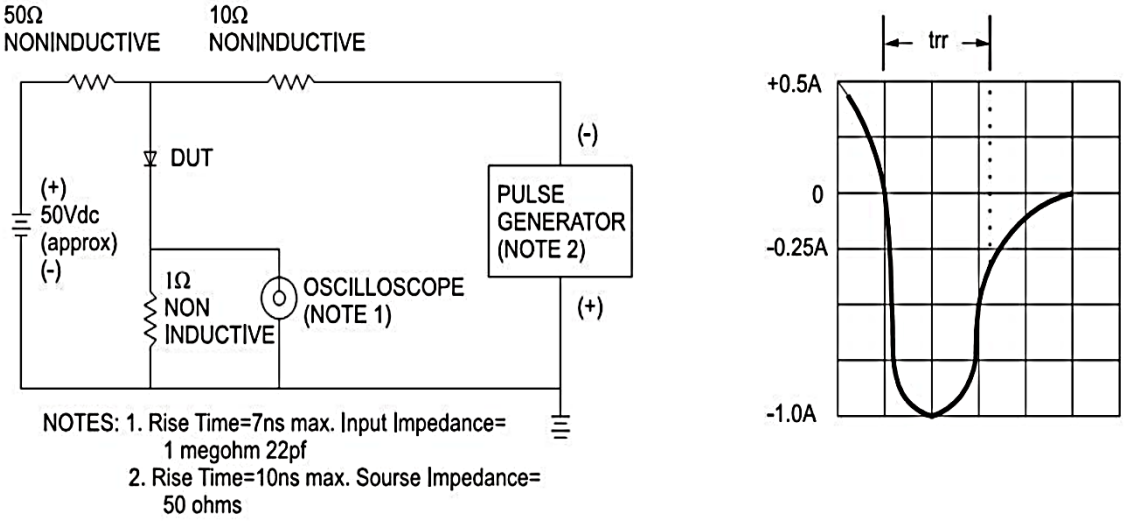
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

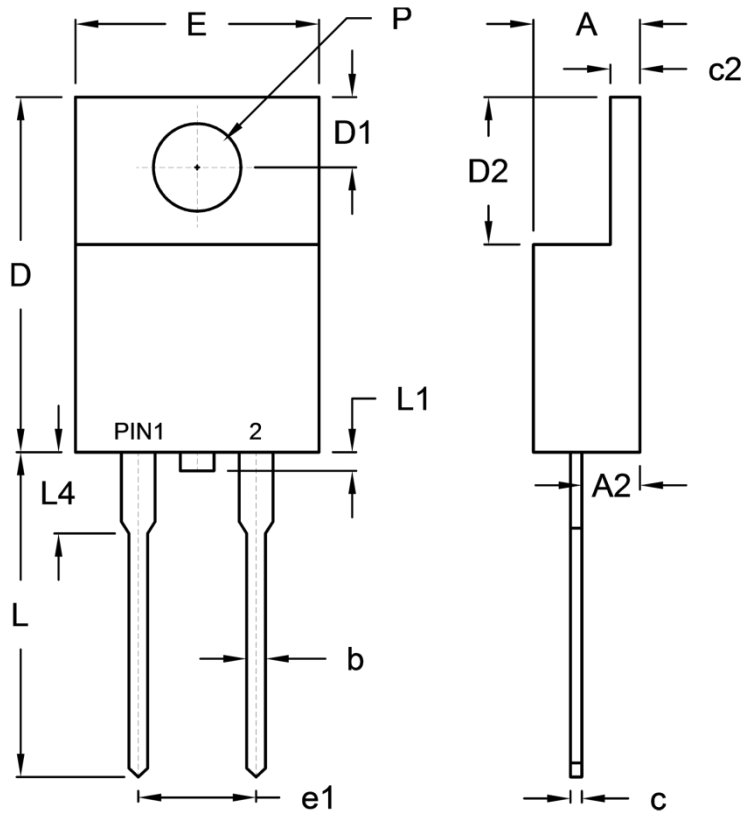
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

TO-220AC



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	4.76	0.174	0.187
A2	2.20	2.80	0.087	0.110
b	0.68	0.94	0.027	0.037
c	0.35	0.64	0.014	0.025
c2	1.14	1.40	0.045	0.055
D	14.60	16.00	0.575	0.630
D1	2.62	3.44	0.103	0.135
D2	5.84	6.86	0.230	0.270
E	-	10.50	-	0.413
e1	4.95	5.20	0.195	0.205
L	13.19	14.79	0.519	0.582
L1	0.00	1.60	0.000	0.063
L4	2.80	4.20	0.110	0.165
P	3.54	4.00	0.139	0.157

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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