

1A, 600V - 900V High Efficient Rectifier

FEATURES

- AEC-Q101 qualified available
- High efficiency, Low V_F
- High efficient recovery time
- 175°C operating junction temperature
- 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: DO-204AC (DO-15)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.400g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	600 - 900	V
I_{FSM}	35	A
T_{JMAX}	150 - 175	°C
Package	DO-204AC (DO-15)	
Configuration	Single die	



DO-204AC (DO-15)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MUR160	MUR190	UNIT
Marking code on the device		MUR160	MUR190	
Repetitive peak reverse voltage	V_{RRM}	600	900	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	630	V
Forward current	I_F	1		A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	35		A
Junction temperature	T_J	-55 to +175	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +175	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	50	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	MUR160	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.25	V
	MUR190			-	1.70	V
	MUR160	$I_F = 1\text{A}, T_J = 150^\circ\text{C}$		-	1.05	V
	MUR190			-	1.50	V
Reverse current @ rated V_R ⁽²⁾		$T_J = 25^\circ\text{C}$	I_R	-	5	μA
		$T_J = 125^\circ\text{C}$		-	150	μA
Junction capacitance	MUR160	1MHz, $V_R = 4.0\text{V}$	C_J	27	-	pF
	MUR190			15	-	pF
Reverse recovery time	MUR160	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	50	ns
	MUR190			-	75	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
MUR1x	DO-204AC (DO-15)	3,500 / Tape & Reel
MUR1x A0G	DO-204AC (DO-15)	1,500 / Ammo box
MUR1xH	DO-204AC (DO-15)	3,500 / Tape & Reel
MUR1xHA0G	DO-204AC (DO-15)	1,500 / Ammo box

Notes:

1. "x" defines voltage from 600V (MUR160) to 900V (MUR190)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

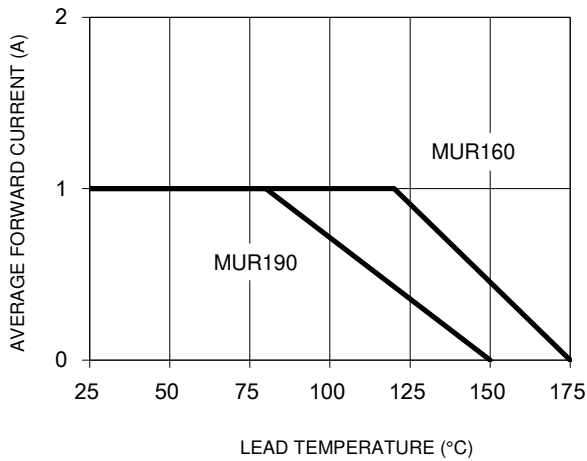


Fig.2 Typical Junction Capacitance

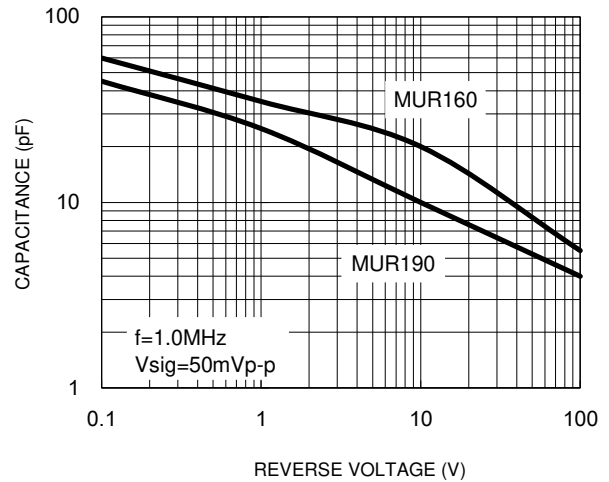


Fig.3 Typical Reverse Characteristics

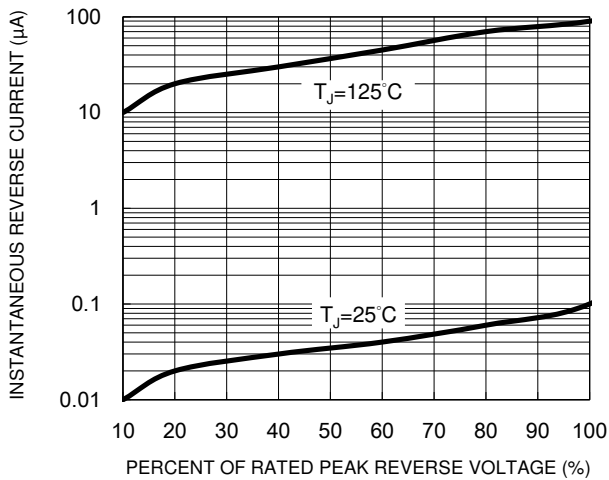


Fig.4 Typical Forward Characteristics

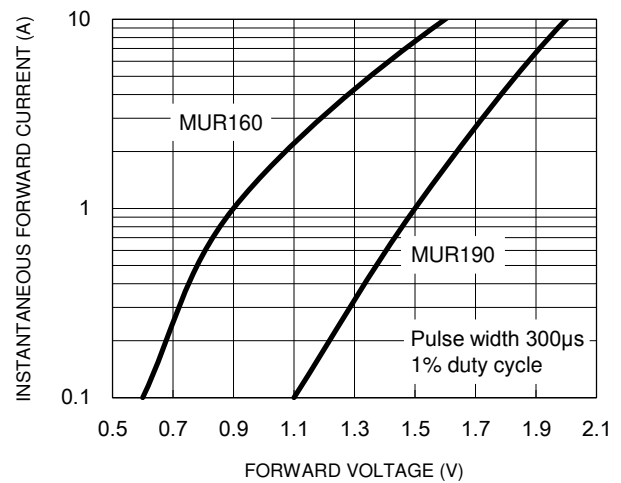
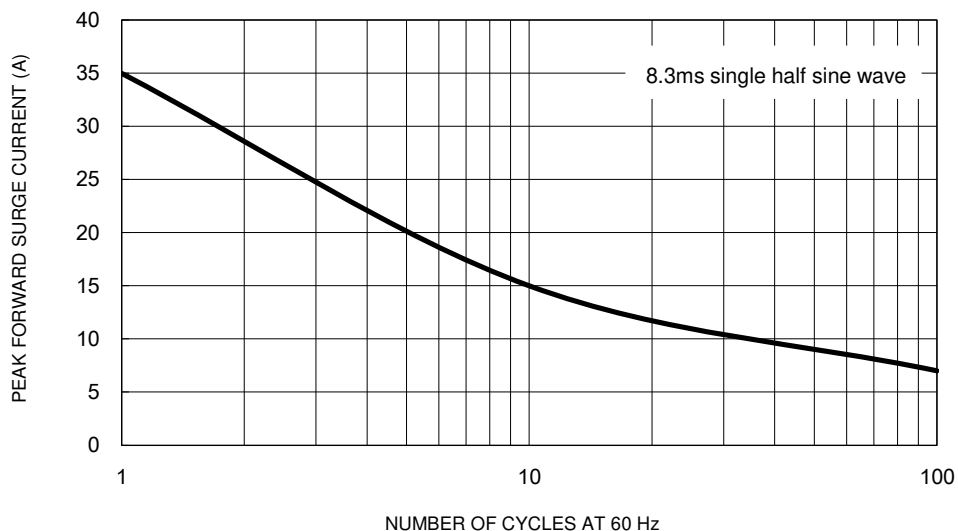


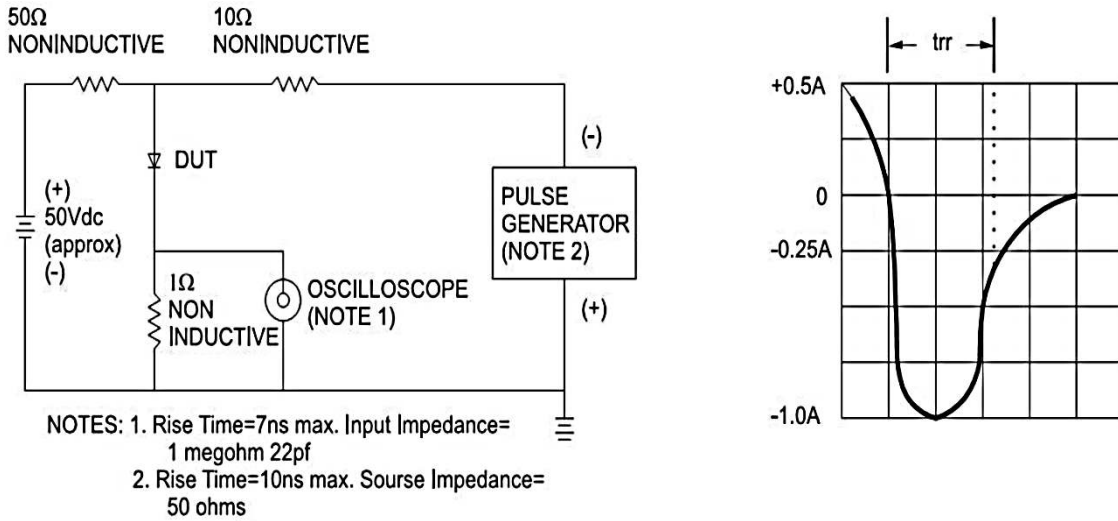
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

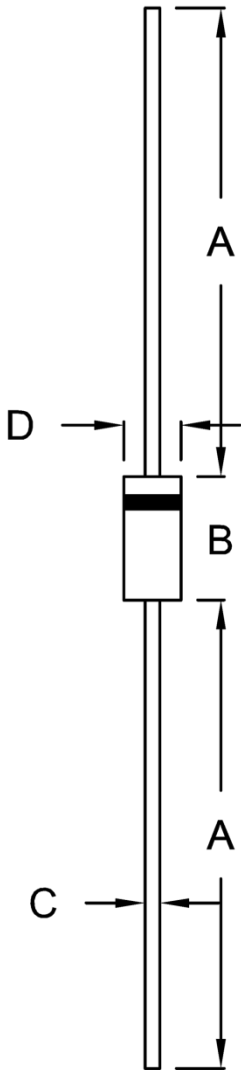
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	5.80	7.60	0.228	0.299
C	0.70	0.90	0.028	0.035
D	2.60	3.60	0.102	0.142

MARKING DIAGRAM



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

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