

## 16A, 200V - 600V Ultra Fast Rectifier

### FEATURES

- AEC-Q101 qualified available
- Ultra fast recovery times
- 175°C operating junction temperature
- Popular TO-220AB Package
- High temperature glass passivated junction
- High voltage capability to 600 volts
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

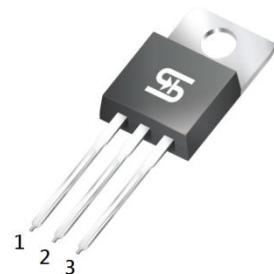
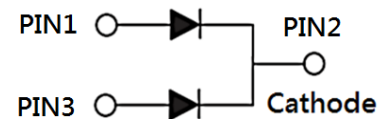
### APPLICATIONS

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

### MECHANICAL DATA

- Case: TO-220AB
- 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: 1.82g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	16	A
$V_{RRM}$	200 - 600	V
$I_{FSM}$	100	A
$T_{JMAX}$	175	°C
Package	TO-220AB	
Configuration	Dual dies	


**TO-220AB**


ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MUR1620CT	MUR1640CT	MUR1660CT	UNIT
Marking code on the device		MUR1620CT	MUR1640CT	MUR1660CT	
Repetitive peak reverse voltage	$V_{RRM}$	200	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	280	420	V
Forward current	$I_F$	16			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	MUR1620CT	$R_{\theta JC}$	3	°C/W
Junction-to-case thermal resistance	MUR1640CT MUR1660CT	$R_{\theta JC}$	2	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	MUR1620CT	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.975	V
	MUR1640CT			-	1.300	V
	MUR1660CT			-	1.500	V
	MUR1620CT	$I_F = 8\text{A}, T_J = 150^\circ\text{C}$		-	0.895	V
	MUR1640CT			-	1.100	V
	MUR1660CT			-	1.200	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	MUR1620CT	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	MUR1640CT MUR1660CT			-	10	$\mu\text{A}$
	MUR1620CT	$T_J = 125^\circ\text{C}$		-	250	$\mu\text{A}$
	MUR1640CT MUR1660CT			-	500	$\mu\text{A}$
Reverse recovery time	MUR1620CT	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	-	25	ns
	MUR1640CT MUR1660CT			-	50	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
MUR16xCT	TO-220AB	50 / Tube
MUR16xCTH	TO-220AB	50 / Tube

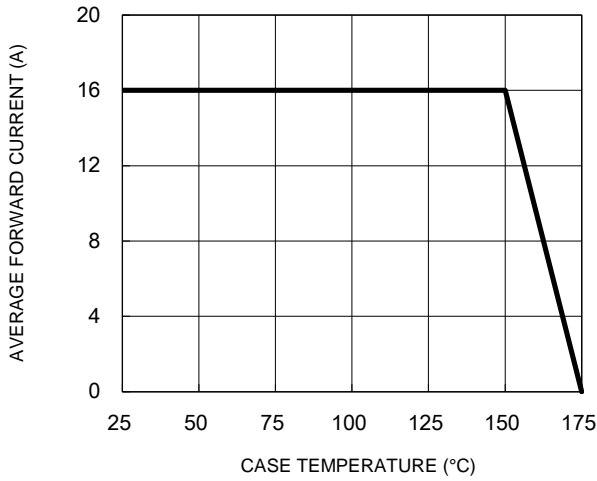
**Notes:**

1. "x" defines voltage from 200V(MUR1620CT) to 600V(MUR1660CT)
2. "H" means AEC-Q101 qualified

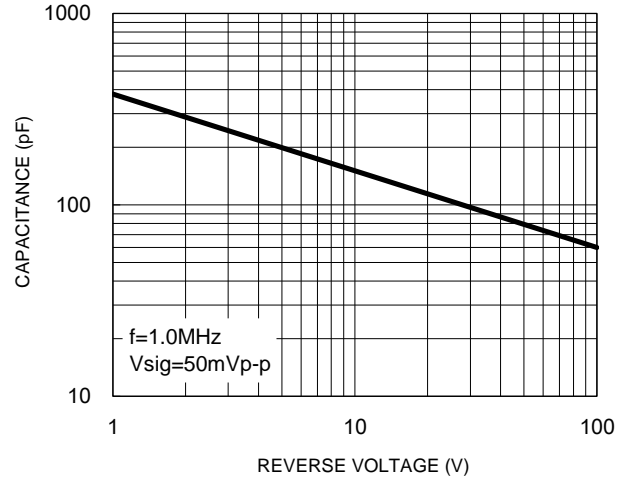
**CHARACTERISTICS CURVES**

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

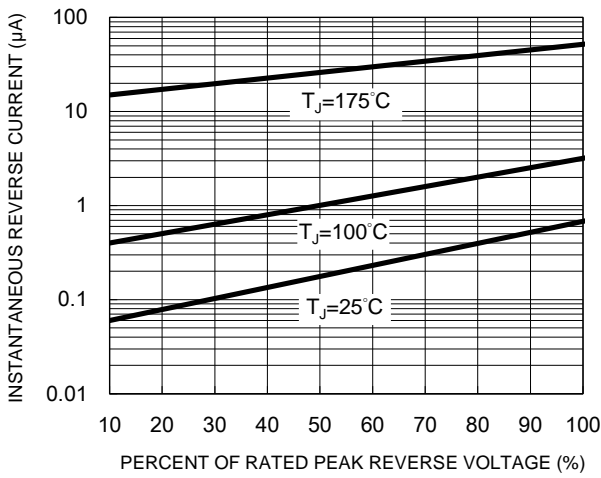
**Fig.1 Forward Current Derating Curve**



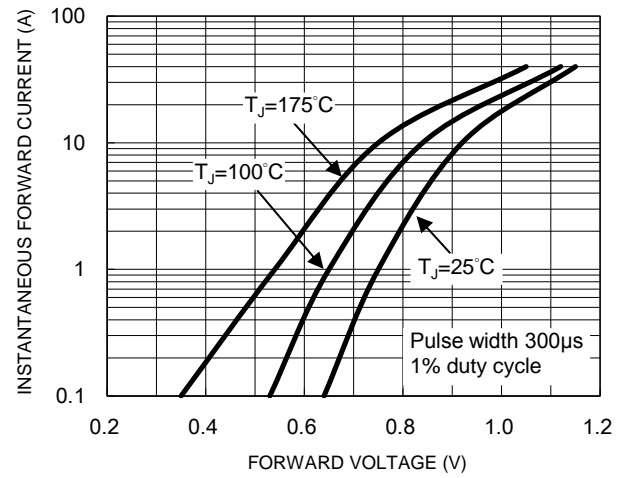
**Fig.2 Typical Junction Capacitance**



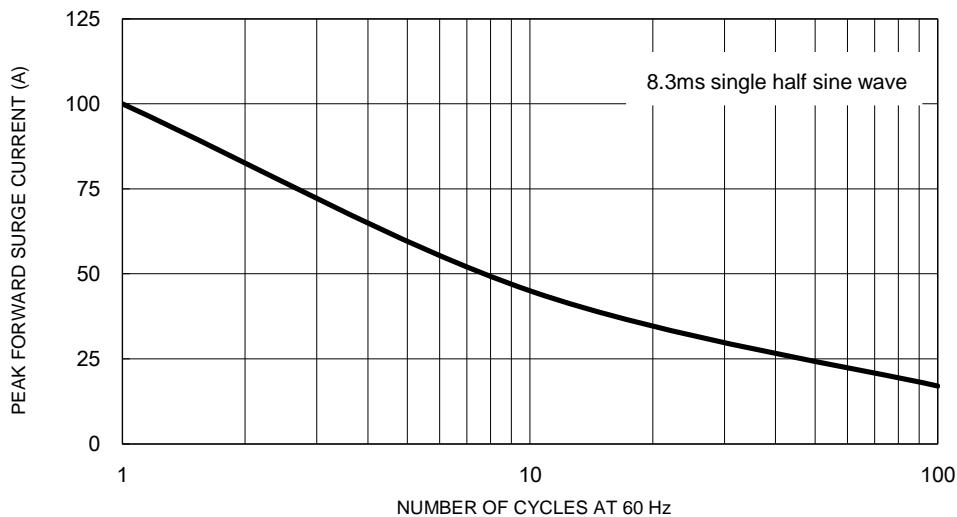
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



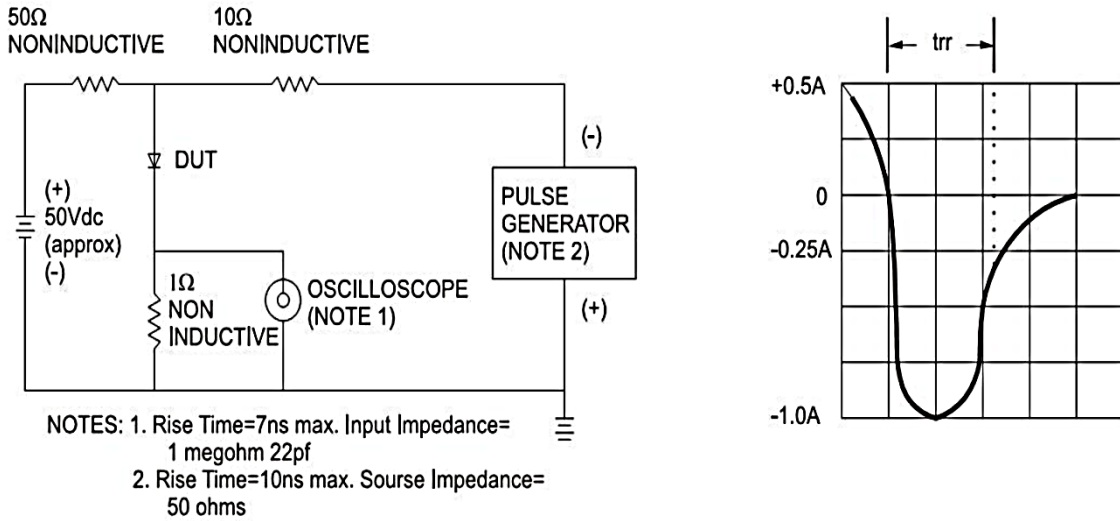
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



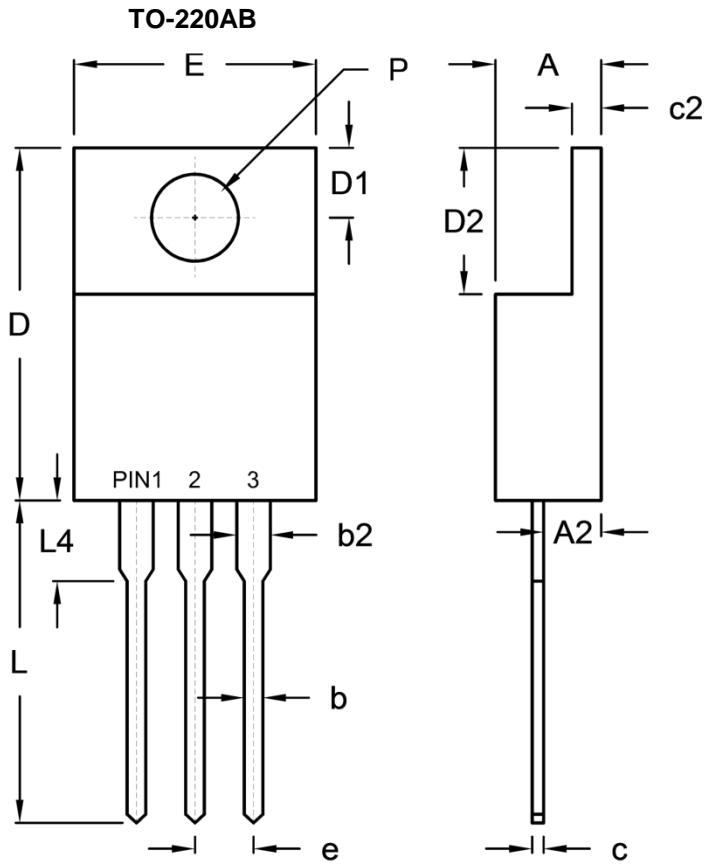
**CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25°C unless otherwise noted)

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



**PACKAGE OUTLINE DIMENSIONS**



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
b2	1.14	1.77	0.045	0.070
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
e	2.41	2.67	0.095	0.105
L	13.19	14.79	0.519	0.582
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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