

## Switchmode Dual Ultrafast Power Rectifiers

Designed for use in switching power supplies inverters and as free wheeling diodes. These state-of-the-art devices have the following

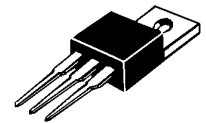
### Features

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage, High Current Capability
- \* High-Switching Speed 50 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O
- \* *Pb free*
- \* *In compliance with EU RoHs directives*



**ULTRA FAST  
RECTIFIERS**

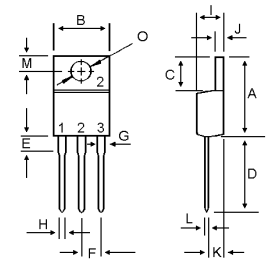
**16 AMPERES  
400 VOLTS**



**TO-220AB**

### MAXIMUM RATINGS

Characteristic	Symbol	UE16C40C	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	280	V
Average Rectifier Forward Current (per diode) Total Device (Rated $V_R$ )	$I_{F(AV)}$	8 16	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	16	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz)	$I_{FSM}$	100	A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	°C



DIM	MILLIMETERS	
	MIN	MAX
A	14.68	16.00
B	9.78	10.42
C	5.02	6.60
D	13.00	14.62
E	3.10	4.19
F	2.41	2.67
G	1.10	1.67
H	0.69	1.01
I	4.22	4.98
J	1.14	1.40
K	2.20	3.30
L	0.28	0.61
M	2.48	3.00
O	3.50	4.00

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage ( $I_F = 8.0$ Amp $T_C = 25^\circ C$ ) ( $I_F = 8.0$ Amp $T_C = 125^\circ C$ )	$V_F$	---	1.15 1.00	1.30 ---	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25^\circ C$ ) (Rated DC Voltage, $T_C = 125^\circ C$ )	$I_R$	---	0.01 5	10 ---	uA
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A)	$T_{rr}$	---	24	50	ns
Typical Thermal Resistance junction to case	$R_{\theta jc}$		3.5		°C/w
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f = 1$ MHz)	$C_P$		40		pF

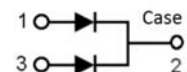


FIG-1 TYPICAL FORWARD CHARACTERISTICS

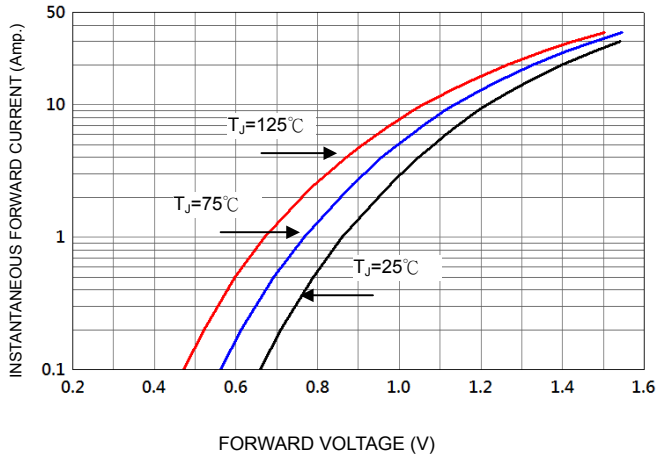


FIG-3 FORWARD CURRENT DERATING CURVE

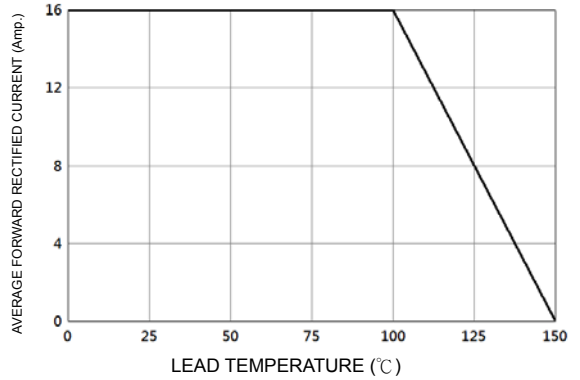


FIG-2 TYPICAL REVERSE CHARACTERISTICS

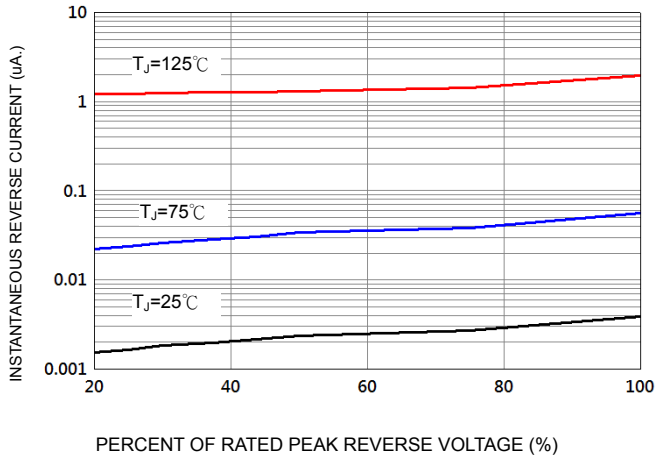


FIG-4 TYPICAL JUNCTION CAPACITANCE

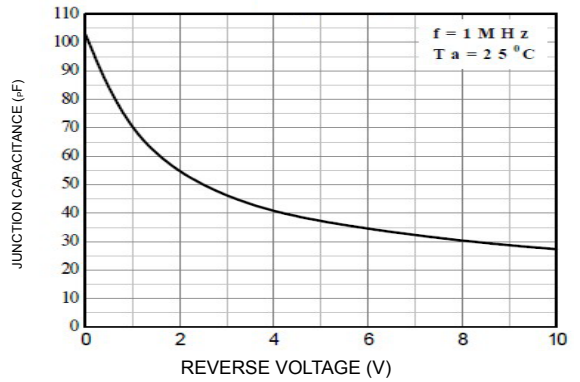
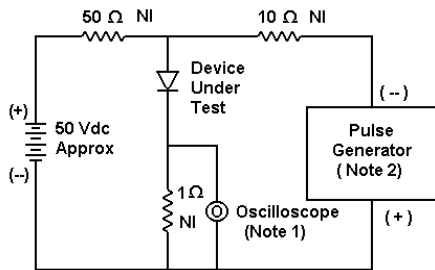
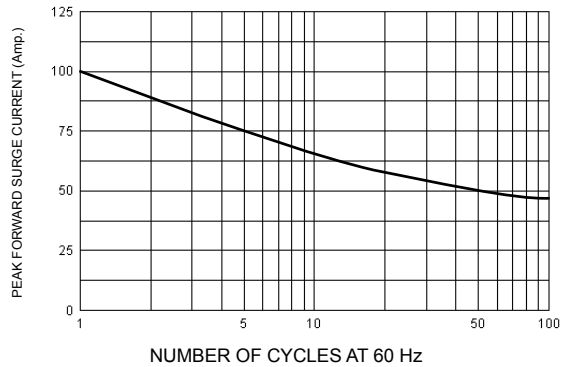
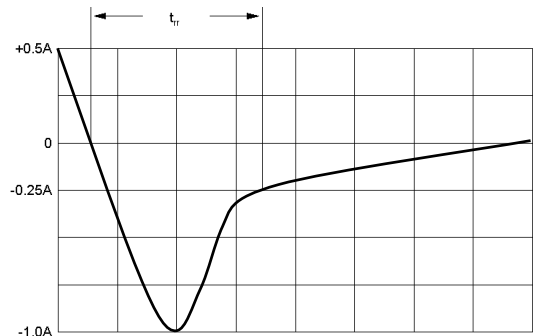


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M $\Omega$ , 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50  $\Omega$



Set time base for 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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