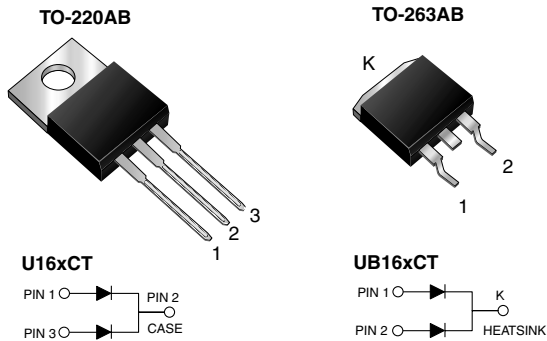


## Dual Common-Cathode Ultrafast Plastic Rectifier



### FEATURES



- Oxide planar chip junction
- Ultrafast recovery time
- Soft recovery characteristics
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 245 °C (for TO-263AB package)
- Solder Dip 260 °C, 40 seconds (for TO-220AB package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching power supplies, free-wheeling diodes, dc-to-dc converters or polarity protection specifically for DCM application.

### MECHANICAL DATA

**Case:** TO-220AB & TO-263AB

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8 A x 2
$V_{RRM}$	100 V, 150 V, 200 V
$I_{FSM}$	80 A
trr	35 ns
$V_F$ at $I_F = 8$ A	0.87 V
$T_{jmax}$	150 °C

MAXIMUM RATINGS ( $T_C = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	U(B)16BCT	U(B)16CCT	U(B)16DCT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	150	200	V
Max. average forward rectified current (see Fig. 1) Total device per diode	$I_{F(AV)}$	16 8			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	80			A
Electrostatic discharge capacitor voltage, Human body model: C = 250 pF, R = 1.5 kΩ	$V_C$	8			KV
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150			°C

# U(B)16BCT thru U(B)16DCT

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ELECTRICAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode <sup>(1)</sup>	at I <sub>F</sub> = 4 A I <sub>F</sub> = 8 A	V <sub>F</sub>	0.90 0.99	- 1.10	V
	at I <sub>F</sub> = 4 A I <sub>F</sub> = 8 A		0.77 0.87	- 0.95	
Reverse current per diode <sup>(1)</sup>	at rated V <sub>R</sub>	I <sub>R</sub>	0.5 155	10 600	μA
Reverse recovery time per diode	at I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	28	35	ns
Reverse recovery time per diode	at I <sub>F</sub> = 8 A, di/dt = 20 A/μs,	t <sub>rr</sub>	67	80	ns
Stored charge per diode	V <sub>R</sub> = 200 V, I <sub>rr</sub> = 0.1 I <sub>RM</sub>	Q <sub>rr</sub>	33	-	nC
Forward recovery time per diode	at I <sub>F</sub> = 8 A, di/dt = 64 A/μs,	t <sub>fr</sub>	160	-	ns
Peak forward voltage per diode	V <sub>F</sub> = 1.1 x V <sub>F</sub> max	V <sub>FP</sub>	3.3	-	V

**Note:**

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	U16xCT	UB16xCT	UNIT
Typical thermal resistance per diode	R <sub>θJC</sub>	3.5		°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	U16DCT-E3/4W	1.87	4W	50/Tube	Tube
TO-263AB	UB16DCT-E3/4W	1.31	4W	50/Tube	Tube
TO-263AB	UB16DCT-E3/8W	1.31	8W	800/Reel	Tape & Reel

## RATINGS AND CHARACTERISTICS CURVES

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

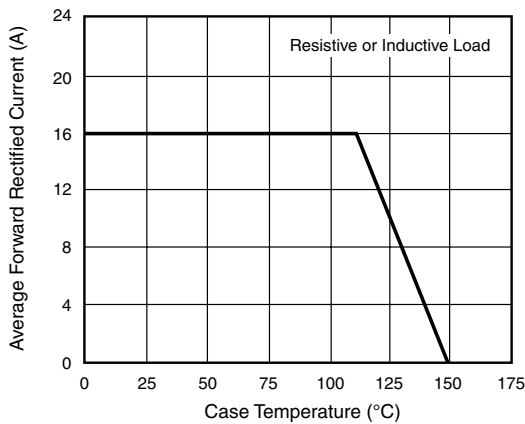


Figure 1. Maximum Forward Current Derating Curve

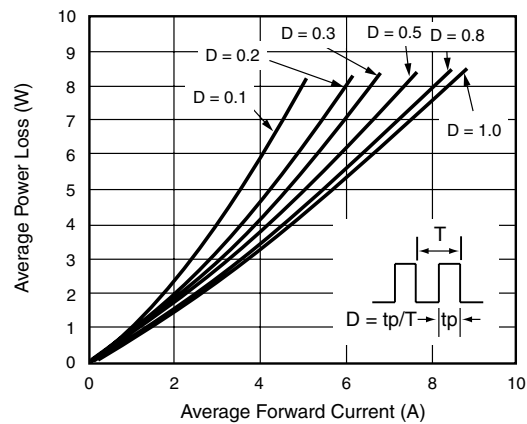


Figure 2. Forward Power Loss Characteristics Per Diode

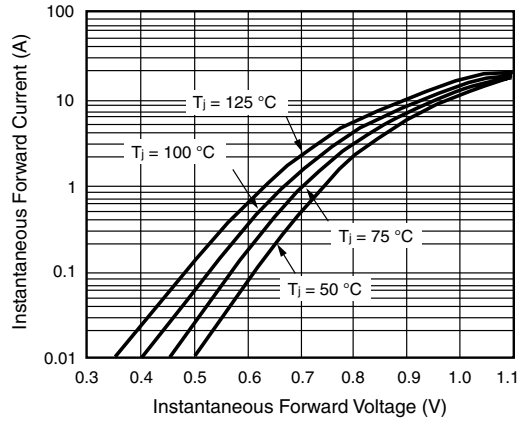


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

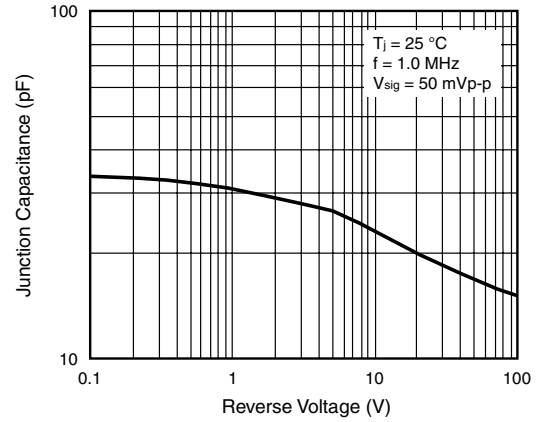


Figure 5. Typical Junction Capacitance Per Diode

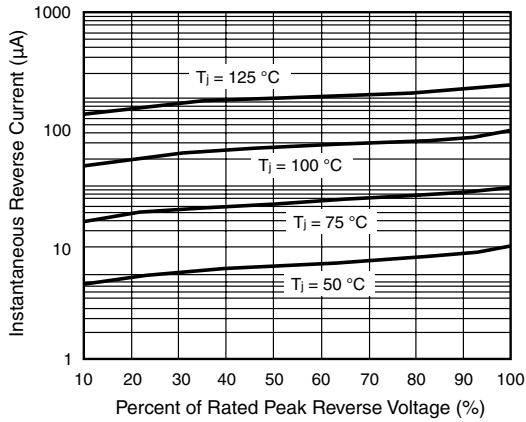


Figure 4. Typical Reverse Characteristics Per Diode

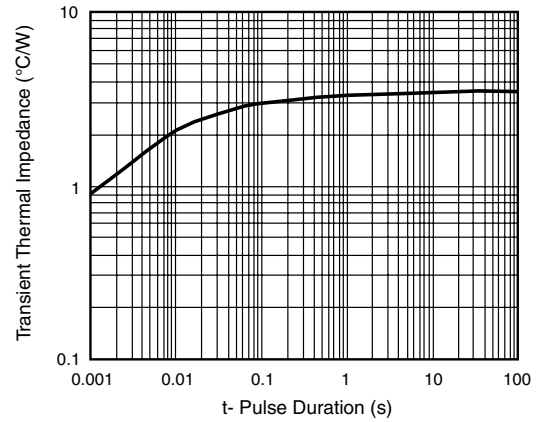


Figure 6. Typical Junction Capacitance Per Diode

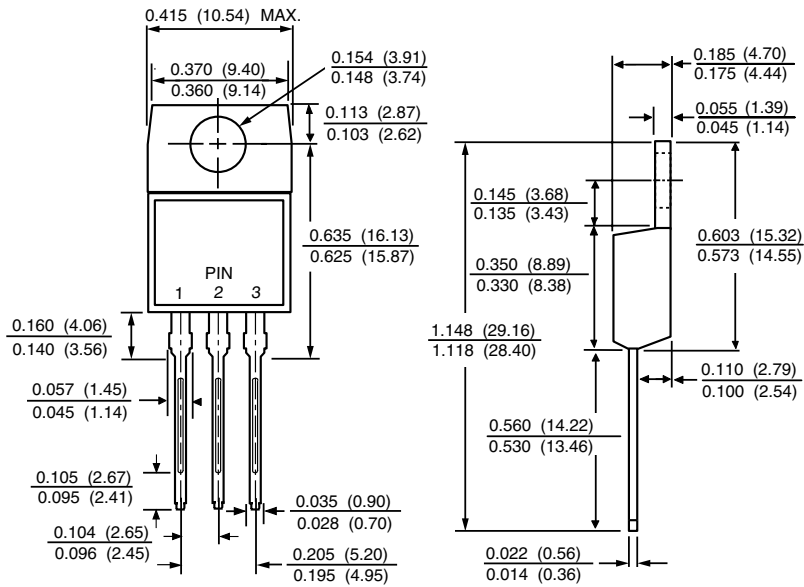
# U(B)16BCT thru U(B)16DCT

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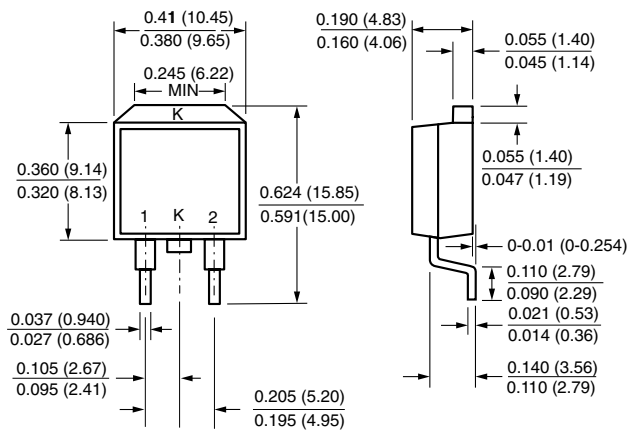


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

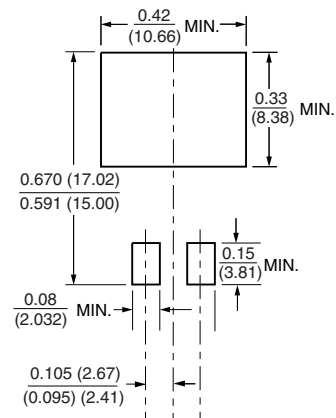
### TO-220AB



### TO-263AB



### Mounting Pad Layout





## Notice

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