MURB1660CT, NRVUB1660CTT4G

Switch Mode Power Rectifier

D²PAK Power Surface Mount Package

These state−of−the−art devices are designed for use in switching power supplies, inverters, and as free wheeling diodes.

Features

- Package Designed for Power Surface Mount Applications
- Ultrafast 60 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- Epoxy Meets UL 94 V−0 @ 0.125 in
- High Temperature Glass Passivated Junction
- High Voltage Capability to 600 V
- Low Leakage Specified @ 150°C Case Temperature
- Short Heat Sink Tab Manufactured − Not Sheared!
- Similar in Size to Industrial Standard TO−220 Package
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free and are RoHS Compliant

Mechanical Characteristics:

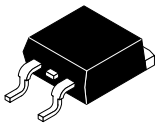
- Case: Epoxy, Molded, Epoxy Meets UL 94 V−0
- Weight: 1.7 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL1 Requirements
- ESD Ratings:
  - Machine Model, C > 400 V
  - Human Body Model, 3B > 8000 V

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

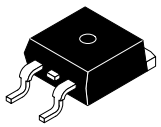
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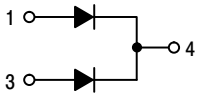
ULTRAFAST RECTIFIER
16 AMPERES, 600 VOLTS



D²PAK
CASE 418B
STYLE 3



D²PAK
CASE 418AJ
STYLE 3



MARKING DIAGRAM



A	= Assembly Location
Y	= Year
WW	= Work Week
U1660	= Specific Device Code
G	= Pb−Free Package
AKA	= Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping†
MURB1660CTG	D²PAK (418AJ)	50 Units/Rail
MURB1660CTT4G	D²PAK (418AJ)	800 / Tape & Reel
NRVUB1660CTT4G	D²PAK (418B)	800 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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MAXIMUM RATINGS (Per Leg)

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	600	V
Average Rectified Forward Current (Rated V_R, T_C = 150°C) Total Device	$I_{F(AV)}$	8.0 16	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 150°C)	I_{FM}	16	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	100	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	2.0	°C/W
Maximum Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	50	°C/W
Temperature for Soldering Purposes: 1/8″ from Case for 5 Seconds	T_L	260	°C

1. See Chapter 7 for mounting conditions.

ELECTRICAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) (i_F = 8.0 Amp, T_C = 150°C) (i_F = 8.0 Amp, T_C = 25°C)	v_F	 1.20 1.50	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_C = 150°C) (Rated dc Voltage, T_C = 25°C)	i_R	 500 10	μA
Maximum Reverse Recovery Time (I_F = 1.0 Amp, di/dt = 50 Amp/μs) (I_F = 0.5 Amp, i_R = 1.0 Amp, I_{REC} = 0.25 Amp)	t_{rr}	 60 50	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

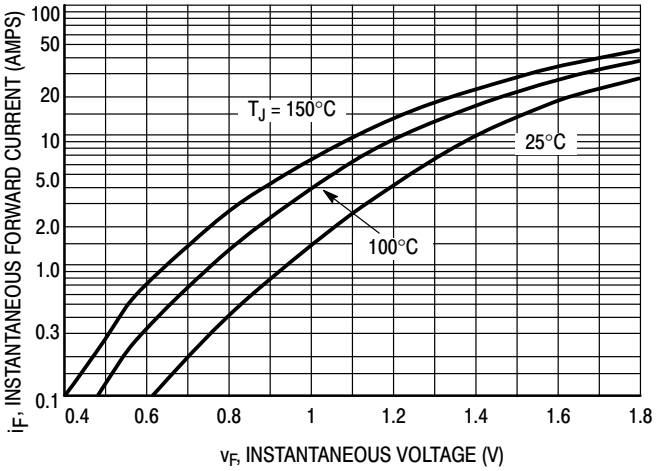


Figure 1. Typical Forward Voltage, Per Leg

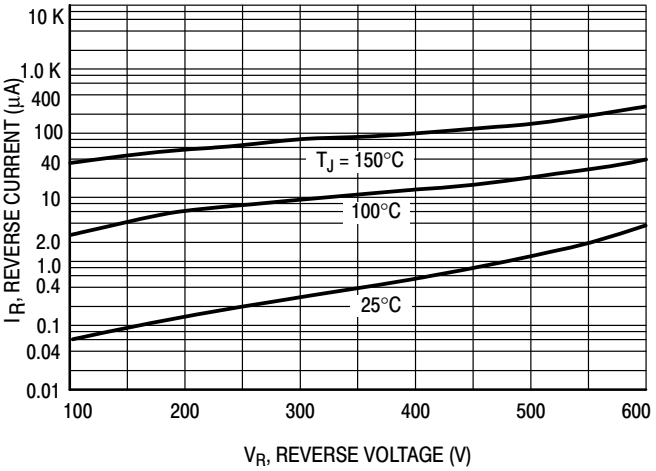


Figure 2. Typical Reverse Current, Per Leg

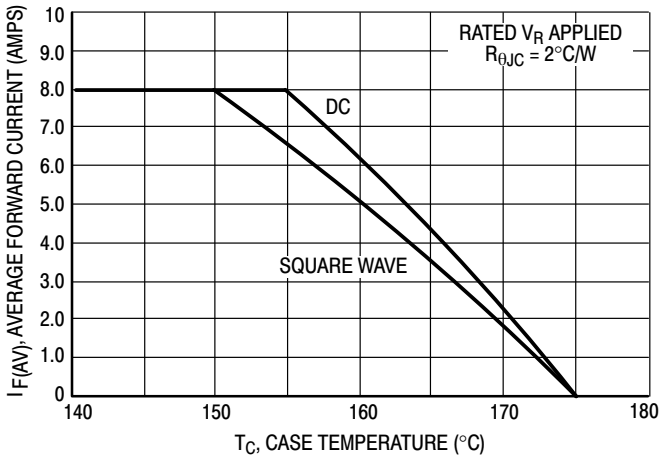


Figure 3. Current Derating, Case, Per Leg

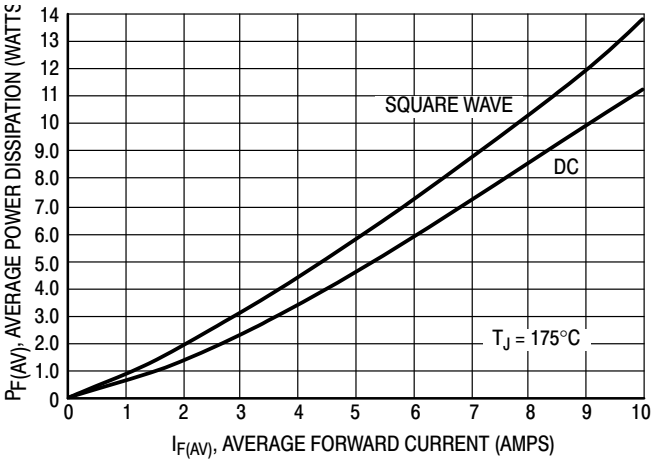


Figure 4. Power Dissipation, Per Leg

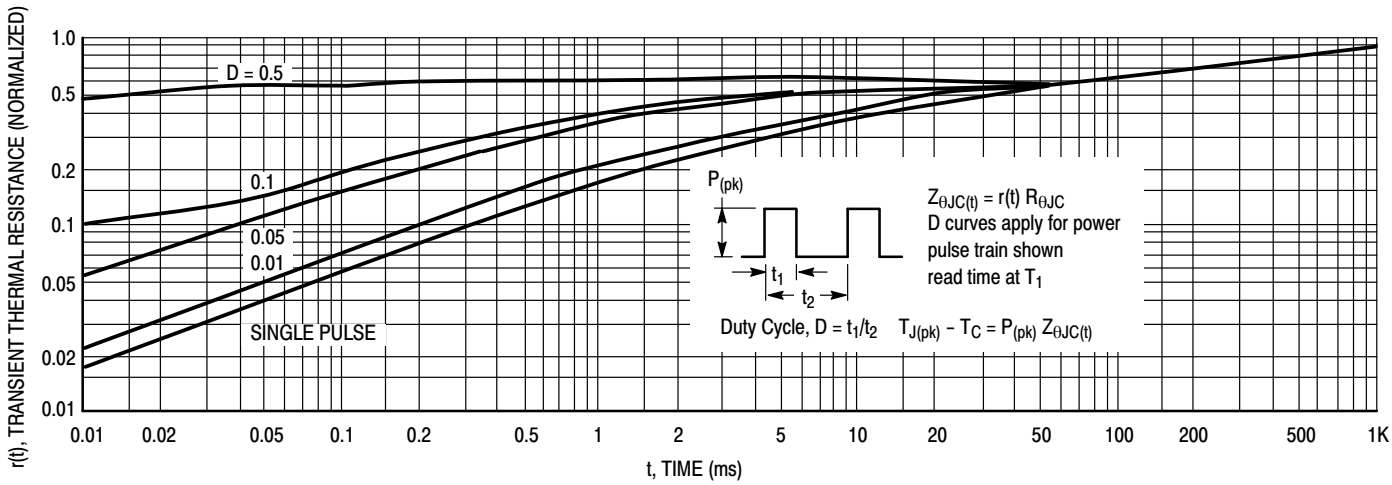


Figure 5. Thermal Response

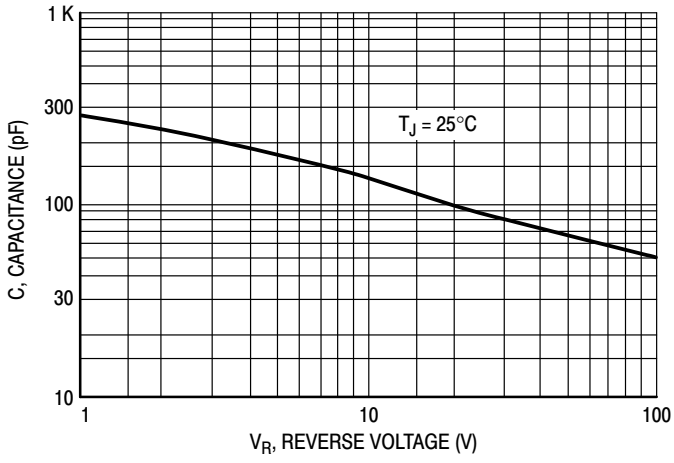
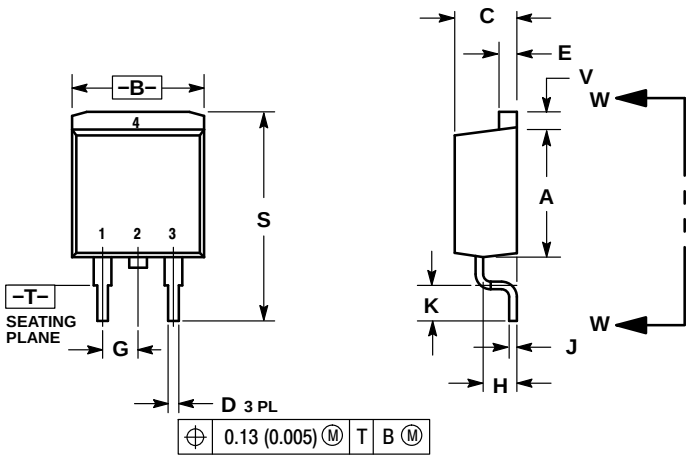


Figure 6. Typical Capacitance, Per Leg

PACKAGE DIMENSIONS

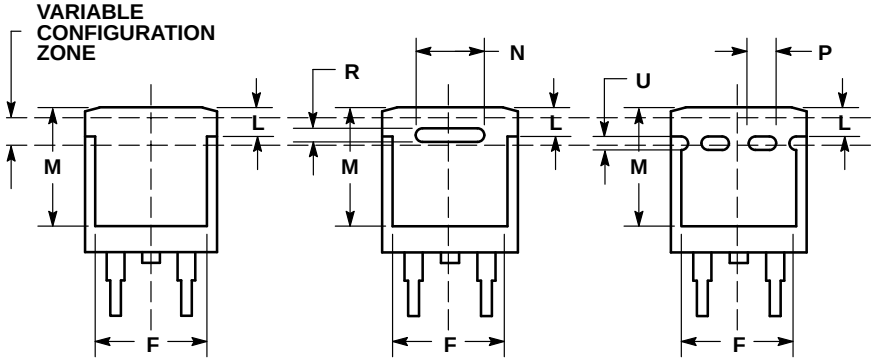
D²PAK 3
CASE 418B−04
ISSUE K



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 418B−01 THRU 418B−03 OBSOLETE, NEW STANDARD 418B−04.

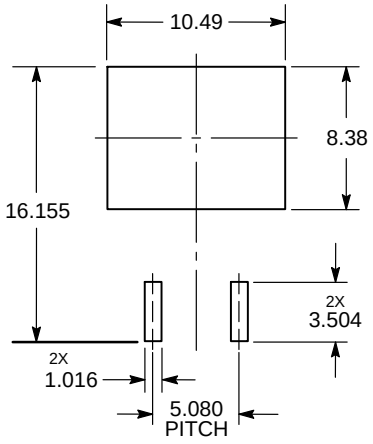
	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.340	0.380	8.64	9.65
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.83
D	0.020	0.035	0.51	0.89
E	0.045	0.055	1.14	1.40
F	0.310	0.350	7.87	8.89
G	0.100 BSC		2.54 BSC	
H	0.080	0.110	2.03	2.79
J	0.018	0.025	0.46	0.64
K	0.090	0.110	2.29	2.79
L	0.052	0.072	1.32	1.83
M	0.280	0.320	7.11	8.13
N	0.197 REF		5.00 REF	
P	0.079 REF		2.00 REF	
R	0.039 REF		0.99 REF	
S	0.575	0.625	14.60	15.88
V	0.045	0.055	1.14	1.40

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE



VIEW W−W 1 | VIEW W−W 2 | VIEW W−W 3

SOLDERING FOOTPRINT*

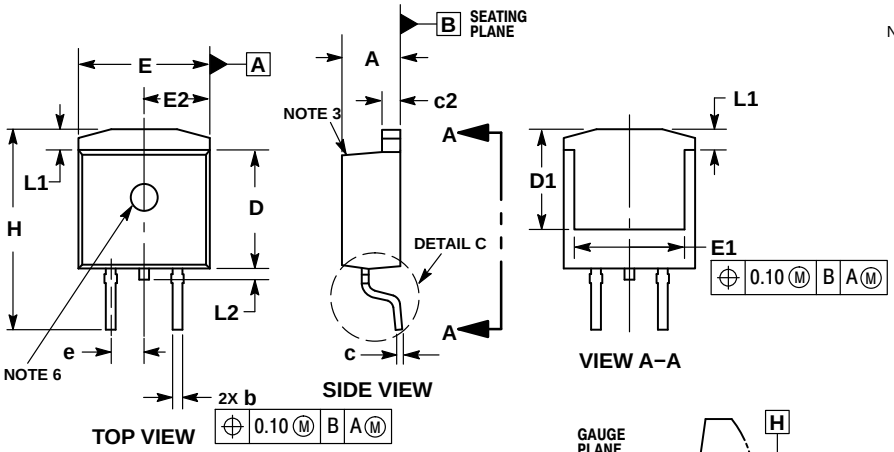


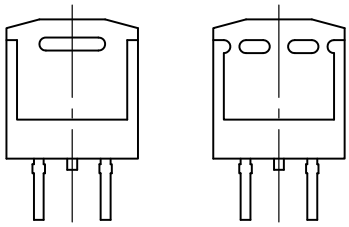
DIMENSIONS: MILLIMETERS

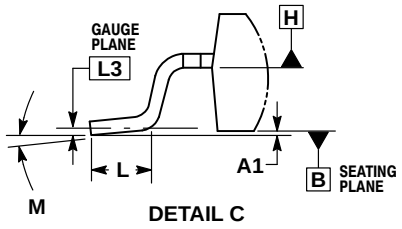
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PACKAGE DIMENSIONS

D²PAK−3 (TO−263, 3−LEAD)
CASE 418AJ
ISSUE B





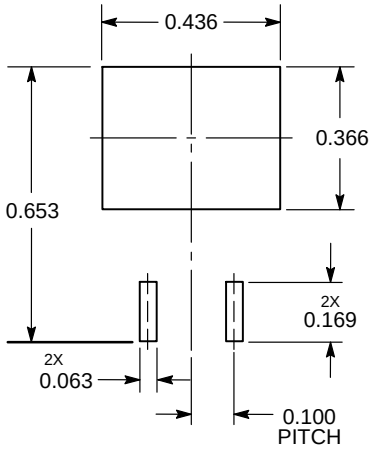


NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. CHAMFER OPTIONAL
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.005 PER SIDE. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY AT DATUM H.
5. THERMAL PAD CONTOUR IS OPTIONAL WITHIN DIMENSIONS E, L1, D1 AND E1.
6. OPTIONAL MOLD FEATURE

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.190	4.06	4.83
A1	0.000	0.010	0.00	0.25
b	0.020	0.039	0.51	0.99
c	0.012	0.029	0.30	0.74
c2	0.045	0.065	1.14	1.65
D	0.330	0.380	8.38	9.65
D1	0.260	−−−−	6.60	−−−−
E	0.380	0.420	9.65	10.67
E1	0.245	−−−−	6.22	−−−−
e	0.100 BSC		2.54 BSC	
H	0.575	0.625	14.60	15.88
L	0.070	0.110	1.78	2.79
L1	−−−−	0.066	−−−−	1.68
L2	−−−−	0.070	−−−−	1.78
L3	0.010 BSC		0.25 BSC	
M	0°	8°	0°	8°

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

RECOMMENDED SOLDERING FOOTPRINT



DIMENSIONS: INCHES

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