MURHB840CTG, MURHB840CTT4G, SURHB8840CTT4G

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 28 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
- Low Leakage Specified @ 150°C Case Temperature
- Short Heat Sink Tab Manufactured − Not Sheared!
- Similar in Size to Industrial Standard TO−220 Package
- SURHB8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- SURHB8 Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Packages are Pb-Free*

Mechanical Characteristics:

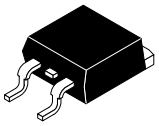
- Case: Epoxy, Molded, Epoxy Meets UL 94, V−0
- Weight: 1.7 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL1 Requirements
-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

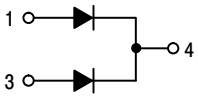
ON Semiconductor®

http://onsemi.com

ULTRAFAST RECTIFIER
8.0 AMPERES, 400 VOLTS



D²PAK
CASE 418B
STYLE 3



MARKING DIAGRAM

A	= Assembly Location
Y	= Year
WW	= Work Week
UH840	= Device Code
G	= Pb−Free Package
AKA	= Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping†
MURHB840CTG	D²PAK (Pb−Free)	50 Units/Rail
MURHB840CTT4G	D²PAK (Pb−Free)	800 / Tape & Reel
SURHB8840CTT4G	D²PAK (Pb−Free)	800 / Tape & Reel

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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	V
Average Rectified Forward Current (Rated V_R, T_C = 120°C) Total Device	$I_{F(AV)}$	4.0 8.0	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 120°C)	I_{FM}	8.0	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	100	A
Controlled Avalanche Energy	W_{AVAL}	20	mJ
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +175	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS (Per Leg)

Rating	Symbol	Value	Unit
Maximum Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	3.0	°C/W
Maximum Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	50	°C/W

ELECTRICAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) (i_F = 4.0 A, T_C = 150°C) (i_F = 4.0 A, T_C = 25°C)	v_F	1.9 2.2	V
Maximum Instantaneous Reverse Current (Note 1) (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 A, di/dt = 50 A/μs)	t_{rr}	28	ns
Typical Peak Reverse Recovery Current (I_F = 1.0 A, di/dt = 50 A/μs)	I_{RM}	0.7	A

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

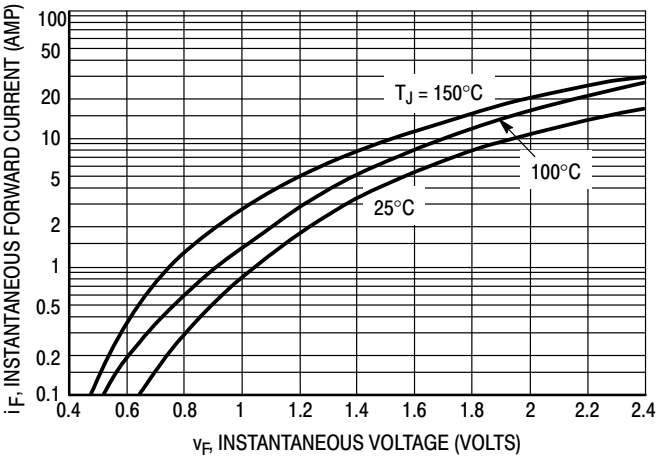


Figure 1. Typical Forward Voltage

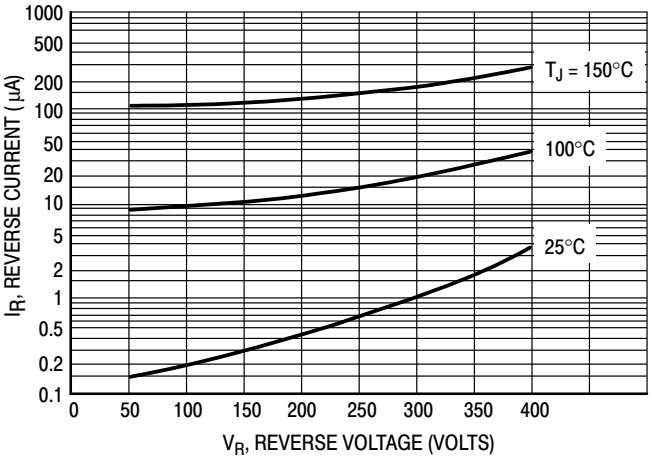


Figure 2. Typical Reverse Current, Per Leg

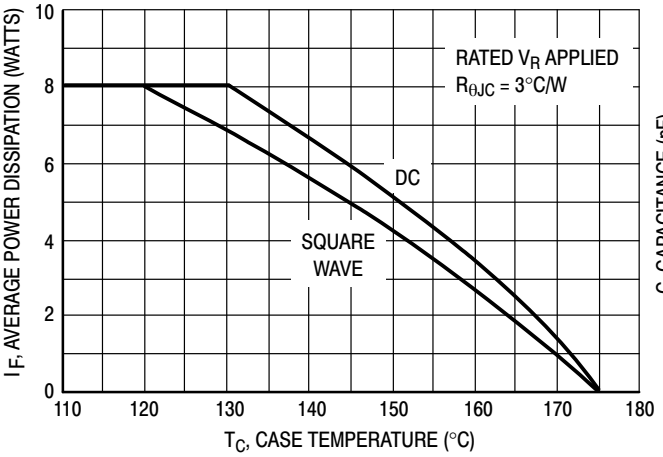


Figure 3. Current Derating, Case

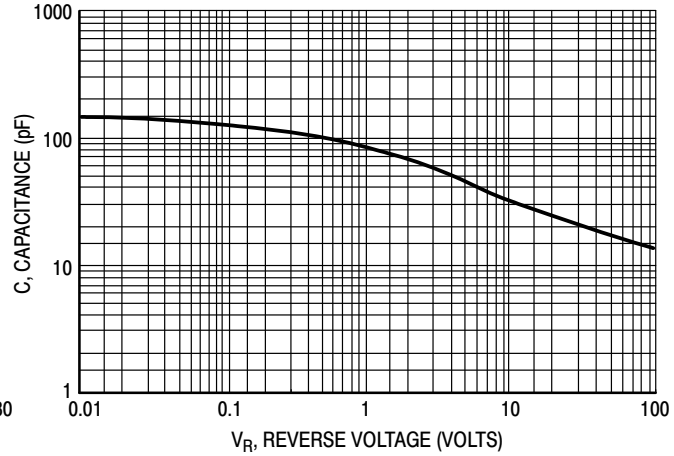


Figure 4. Typical Capacitance, Per Leg

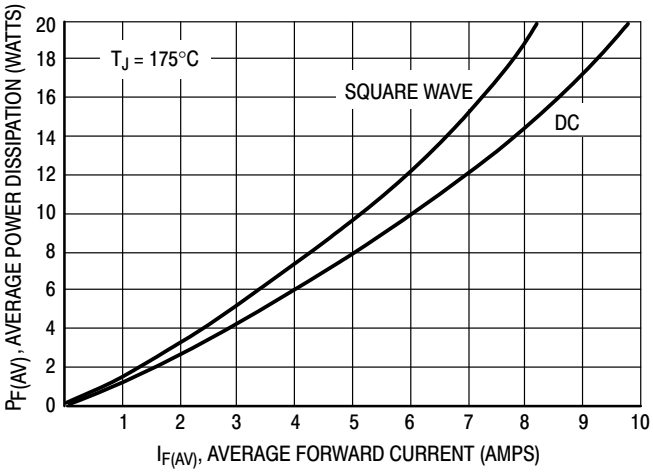
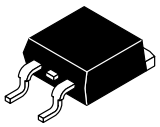


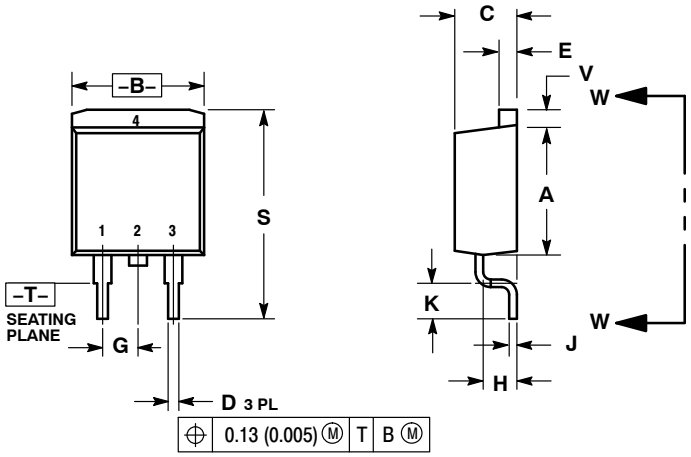
Figure 5. Forward Power Dissipation, Per Leg



D²PAK 3
CASE 418B–04
ISSUE L

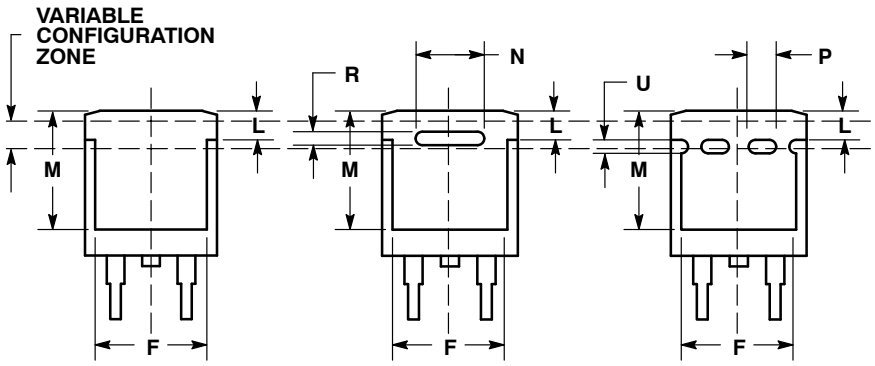
DATE 17 FEB 2015

SCALE 1:1



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



VIEW W–W 1 | VIEW W–W 2 | VIEW W–W 3

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 2:
PIN 1. GATE
2. DRAIN
3. SOURCE
4. DRAIN

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

STYLE 4:
PIN 1. GATE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

STYLE 5:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. ANODE

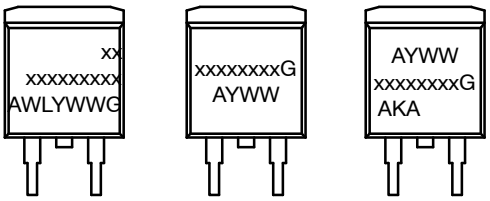
STYLE 6:
PIN 1. NO CONNECT
2. CATHODE
3. ANODE
4. CATHODE

MARKING INFORMATION AND FOOTPRINT ON PAGE 2

D²PAK 3
CASE 418B−04
ISSUE L

DATE 17 FEB 2015

GENERIC
MARKING DIAGRAM*

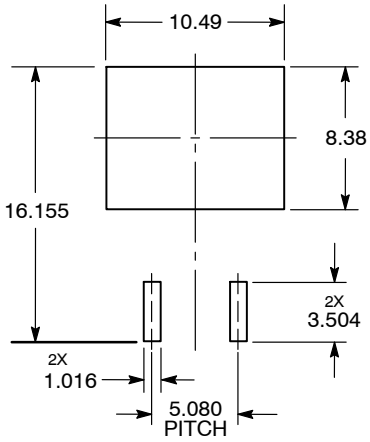


IC **Standard** **Rectifier**

xx	= Specific Device Code
A	= Assembly Location
WL	= Wafer Lot
Y	= Year
WW	= Work Week
G	= Pb−Free Package
AKA	= Polarity Indicator

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present.

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.

DOCUMENT NUMBER:	**98ASB42761B**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red.	
DESCRIPTION:	**D²PAK 3**		**PAGE 2 OF 2**

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

onsemi Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

◊