

POWERMITE[®]

PLASTIC SURFACE-MOUNT POWER PACKAGE

Miniature



Surface Mount

RoHS



Microsemi.

The Powermite[®] Family

Introduction

Powermite[®] is Microsemi's patented low-profile architecture for packaging surface mount devices with the industry's highest power density in the smallest possible footprint.

The current portfolio includes:

- 1A through 10A Schottky Rectifiers to 200V
- 1A through 8A Ultrafast Rectifiers to 800V
- 150W (10x1000) and 1500 W (10x1000) TVS diodes
- 2.5W PIN diodes to 400V
- Low Noise Zener Diodes 1.8V to 200V
- 3W Zener Diodes 3.3V to 200V
- High Speed Silicon Controlled Rectifiers
- N Channel MOSFET's 500V and 1000V

Outperforms Conventional SMT

With no wire bonds and non-magnetic materials, Powermite reduces high frequency losses and provides dramatically higher surge ratings compared to conventional wire bonded SMT packages. With a large, full-metal bottom, all Powermite[®] devices deliver superior heat dissipation and thermal capabilities. Mechanical strength is excellent due to a metal lock design that permanently bonds metal electrodes to the plastic housing.

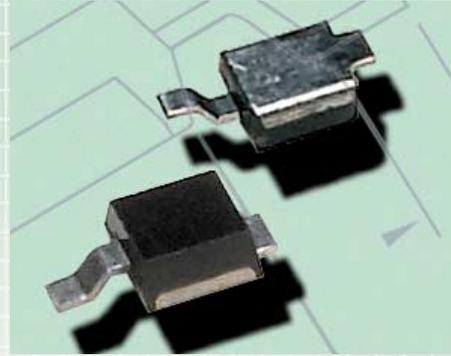
- Reduced High Frequency Losses
- Built-in heatsink, superior heat dissipation
- High Mechanical Strength
- 1/3 the size of comparably rated products

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Powermite 1

The original 2-lead Powermite package provides a breakthrough high density design for handheld and thermally sensitive power supply and battery charging applications. In addition to its unique full-metal bottom that provides an optimal path for dissipating junction heat, the Powermite package's patented wrap-around interlocking construction allows solder fillets to form during the surface mount reflow process for superior heat dissipation and mechanical strength. Measuring less than 1mm high and 2mm square, Powermite packaging provides a dramatic one-third reduction in size compared with two-lead devices in conventional SMA packages. Compared with similarly-sized SOT-23 devices, Powermite delivers superior thermal and power handling capability.



- 1mm high x 2mm square
- 1/3 smaller than SMA
- Superior performance compared to SOT-23

Powermite 1 Transient Voltage Suppressors

MSCC Part Number	Standoff Voltage V_R	Min Breakdown Voltage $B_V(\text{min})$ @ 1mA	Max Clamping Voltage V_C @ 10A	Peak Pulse Current Amps I_P	Maximum Leakage I_R @ V_R	Max Temperature Coefficient of VBR	Type
	V	V	V	A	uA	%/oC	
UPT5e3	5	6.0	9.5	89.4	50	0.030	Unidirectional
UPT8e3	8	9.0	13.7	62.1	2	0.040	Unidirectional
UPT12e3	12	13.8	21.6	40.3	1	0.050	Unidirectional
UPT15e3	15	16.7	26.0	33.9	1	0.055	Unidirectional
UPT17e3	17	19.0	29.2	30.8	1	0.060	Unidirectional
UPT24e3	24	28.4	43.2	22.0	1	0.070	Unidirectional
UPT28e3	28	31.0	47.8	19.2	1	0.075	Unidirectional
UPT33e3	33	36.8	56.7	16.4	1	0.080	Unidirectional
UPT48e3	48	54.0	84.3	11.2	1	0.090	Unidirectional
UPT5Re3	5	6.0	9.5	60.0	50	0.030	Unidirectional
UPT8Re3	8	9.0	13.7	62.1	2	0.040	Unidirectional
UPT10Re3	10	11.0	18.0	47.2	2	0.045	Unidirectional
UPT12Re3	12	13.8	21.6	40.3	1	0.050	Unidirectional
UPT15Re3	15	16.7	26.0	33.9	1	0.055	Unidirectional
UPT17Re3	17	19.0	29.2	30.8	1	0.060	Unidirectional
UPT24Re3	24	28.4	43.2	22.0	1	0.070	Unidirectional
UPT28Re3	28	31.0	47.8	19.2	1	0.075	Unidirectional
UPT33Re3	33	36.8	56.7	16.4	1	0.080	Unidirectional
UPT48Re3	48	54.0	84.3	11.2	1	0.090	Unidirectional
UPTB5e3	5	6.0	9.5	89.4	50	0.030	Bidirectional
UPTB8e3	8	9.0	13.7	62.1	2	0.040	Bidirectional
UPTB12e3	12	13.8	21.6	40.3	1	0.050	Bidirectional
UPTB15e3	15	16.7	26.0	33.9	1	0.055	Bidirectional
UPTB17e3	17	19.0	29.2	30.8	1	0.060	Bidirectional
UPTB24e3	24	28.4	43.2	22.0	1	0.070	Bidirectional
UPTB28e3	28	31.0	47.8	19.2	1	0.075	Bidirectional
UPTB33e3	33	36.8	56.7	16.4	1	0.080	Bidirectional
UPTB48e3	48	54.0	84.3	11.2	1	0.090	Bidirectional

Note: R equals Reverse Polarity

Powermite 1

1W Zener Diodes, Low Noise

MSCC Part Number	Nominal Zener Voltage (1) $V_Z @ I_{ZT}$	Zener Test Current I_{ZT}	Max Zener Impedance (2) Z_{ZT}	Maximum Noise Density $N_D @ I_{ZT}$	Maximum Zener Current (3) I_{ZM}	Typical Temperature Coefficient of Zener Voltage	Maximum Reverse Current $I_Z @ V_R$
	V	uA	Ohms	uV/HZ	mA	%/oC	uA/Volts
1PMT4614e3	1.8	250	1200	1	262.4	-0.075	7.5 / 1.0
1PMT4615e3	2.0	250	1250	1	240.6	-0.075	5.0 / 1.0
1PMT4616e3	2.2	250	1300	1	218.7	-0.075	4.0 / 1.0
1PMT4617e3	2.4	250	1400	1	207.8	-0.075	2.0 / 1.0
1PMT4618e3	2.7	250	1500	1	196.8	-0.075	1.0 / 1.0
1PMT4619e3	3.0	250	1600	1	190.3	-0.075	0.8 / 1.0
1PMT4620e3	3.3	250	1650	1	185.9	-0.075	7.5 / 1.5
1PMT4621e3	3.6	250	1700	1	181.5	-0.065	7.5 / 2.0
1PMT4622e3	3.9	250	1650	1	174.9	-0.060	5.0 / 2.0
1PMT4623e3	4.3	250	1600	1	168.4	-0.050	4.0 / 2.0
1PMT4624e3	4.7	250	1550	1	164.0	-0.040+0.020	10 / 3.0
1PMT4625e3	5.1	250	1500	2	153.1	-0.045+0.030	10 / 3.0
1PMT4626e3	5.6	250	1400	4	142.2	-0.020+0.040	10 / 4.0
1PMT4627e3	6.2	250	1200	5	133.4	-0.010+0.050	10 / 5.0
1PMT4099e3	6.8	250	200	40	122.5	0.040	10 / 5.17
1PMT4100e3	7.5	250	200	40	111.5	0.045	10 / 5.70
1PMT4101e3	8.2	250	200	40	100.6	0.048	1.0 / 6.24
1PMT4102e3	8.7	250	200	40	96.2	0.049	1.0 / 6.61
1PMT4103e3	9.1	250	200	40	91.9	0.050	1.0 / 6.92
1PMT4104e3	10	250	200	40	83.1	0.055	1.0 / 7.60
1PMT4105e3	11	250	200	40	76.5	0.060	.05 / 8.44
1PMT4106e3	12	250	200	40	69.9	0.065	.05 / 9.12
1PMT4107e3	13	250	200	40	63.4	0.065	.05 / 9.87
1PMT4108e3	14	250	200	40	59.0	0.070	.05 / 10.65
1PMT4109e3	15	250	100	40	54.8	0.070	.05 / 11.40
1PMT4110e3	16	250	100	40	52.5	0.070	.05 / 12.15
1PMT4111e3	17	250	100	40	48.1	0.075	.05 / 12.92
1PMT4112e3	18	250	100	40	45.9	0.075	.05 / 13.37
1PMT4113e3	19	250	150	40	43.7	0.075	.05 / 14.44
1PMT4114e3	20	250	150	40	41.6	0.075	.01 / 15.20
1PMT4115e3	22	250	150	40	37.2	0.080	.01 / 16.72
1PMT4116e3	24	250	150	40	34.9	0.080	.01 / 18.25
1PMT4117e3	25	250	150	40	32.8	0.080	.01 / 19.00
1PMT4118e3	27	250	150	40	30.6	0.085	.01 / 20.45
1PMT4119e3	28	250	200	40	30.6	0.085	.01 / 21.28
1PMT4120e3	30	250	200	40	28.4	0.085	.01 / 22.80
1PMT4121e3	33	250	200	40	26.2	0.085	.01 / 25.08
1PMT4122e3	36	250	200	40	24.0	0.090	.01 / 27.38
1PMT4123e3	39	250	200	40	21.4	0.090	.01 / 29.65
1PMT4124e3	43	250	250	40	19.5	0.090	.01 / 32.65
1PMT4125e3	47	250	250	40	17.7	0.090	.01 / 35.75
1PMT4126e3	51	250	300	40	16.4	0.090	.01 / 38.76
1PMT4127e3	56	250	300	40	14.7	0.090	.01 / 42.60
1PMT4128e3	60	250	400	40	13.9	0.090	.01 / 45.60
1PMT4129e3	62	250	500	40	13.3	0.090	.01 / 47.10
1PMT4130e3	68	250	700	40	12.2	0.095	.01 / 51.68
1PMT4131e3	75	250	700	40	11.2	0.095	.01 / 57.00
1PMT4132e3	82	250	800	40	10.1	0.095	.01 / 62.32
1PMT4133e3	87	250	1000	40	9.6	0.095	.01 / 66.12
1PMT4134e3	91	250	1200	40	9.2	0.095	.01 / 69.16
1PMT4135e3	100	250	1500	40	8.3	0.095	.01 / 76.00

Note 1: Product shown has a standard tolerance of $\pm 5\%$ on the nominal zener voltage. Also available in 2% and 1% tolerance with suffix C and D respectively. V_Z is measured at I_{ZT} with TC (TAB 1) at 30°C.

Note 2: Zener impedance is derived by superimposing on I_{ZT} a 60 Hz rms ac current equal to 10% of I_{ZT} (25µA ac).

Note 3: Based upon 1W maximum power dissipation. Allowance has been made for the higher voltage associated with operation at higher currents and temperature. For determination of voltage change with current deviations from I_{ZT} see MicroNote 202.

Powermite 1 3W Zener Diodes

MSCC Part Number	Zener Voltage (1) V_Z	Zener Test Current I_{ZT}	Dynamic Impedance (2) Z_{ZT}	Knee Current I_{ZK}	Knee Impedance Z_{ZK}	Reverse Current I_R (MAX)	Reverse Voltage V_R
	V	mA	Ohms	mA	Ohms	μ A dc	VOLTS
1PMT5913Be3	3.3	113.6	10.0	1.0	500	100	1.0
1PMT5914Be3	3.6	104.2	9.0	1.0	500	75	1.0
1PMT5915Be3	3.9	96.1	7.5	1.0	500	25	1.0
1PMT5916Be3	4.3	87.2	6.0	1.0	500	5	1.0
1PMT5917Be3	4.7	79.8	5.0	1.0	500	5	1.5
1PMT5918Be3	5.1	73.5	4.0	1.0	350	5	2.0
1PMT5919Be3	5.6	66.9	2.0	1.0	250	5	3.0
1PMT5920Be3	6.2	60.5	2.0	1.0	200	5	4.0
1PMT5921Be3	6.8	55.1	2.5	1.0	200	5	5.2
1PMT5922Be3	7.5	50	3.0	0.5	400	5	6.0
1PMT5923Be3	8.2	45.7	3.5	0.5	400	5	6.5
1PMT5924Be3	9.1	41.2	4.0	0.5	500	5	7.0
1PMT5925Be3	10	37.5	4.5	0.25	500	5	8.0
1PMT5926Be3	11	34.1	5.5	0.25	550	1	8.4
1PMT5927Be3	12	31.2	6.5	0.25	550	1	9.1
1PMT5928Be3	13	28.8	7.0	0.25	550	1	9.9
1PMT5929Be3	15	25.0	9.0	0.25	600	1	11.4
1PMT5930Be3	16	23.4	10	0.25	600	1	12.2
1PMT5931Be3	18	20.8	12	0.25	650	1	13.7
1PMT5932Be3	20	18.7	14	0.25	650	1	15.2
1PMT5933Be3	22	17.0	17.5	0.25	650	1	16.7
1PMT5934Be3	24	15.6	19	0.25	700	1	18.2
1PMT5935Be3	27	13.9	23	0.25	700	1	20.6
1PMT5936Be3	30	12.5	28	0.25	750	1	22.8
1PMT5937Be3	33	11.4	33	0.25	800	1	25.1
1PMT5938Be3	36	10.4	38	0.25	850	1	27.4
1PMT5939Be3	39	9.6	45	0.25	900	1	29.7
1PMT5940Be3	43	8.7	53	0.25	950	1	32.7
1PMT5941Be3	47	8.0	67	0.25	1000	1	35.8
1PMT5942Be3	51	7.3	70	0.25	1100	1	38.8
1PMT5943Be3	56	6.7	86	0.25	1300	1	42.6
1PMT5944Be3	62	6.0	100	0.25	1500	1	47.1
1PMT5945Be3	68	5.5	120	0.25	1700	1	51.2
1PMT5946Be3	75	5.0	140	0.25	2000	1	56.0
1PMT5947Be3	82	4.6	160	0.25	2500	1	62.2
1PMT5948Be3	91	4.1	200	0.25	3000	1	69.2
1PMT5949Be3	100	3.7	250	0.25	3100	1	76.0
1PMT5950Be3	110	3.4	300	0.25	4000	1	83.6
1PMT5951Be3	120	3.1	380	0.25	4500	1	91.2
1PMT5952Be3	130	2.9	450	0.25	5000	1	98.8
1PMT5953Be3	150	2.5	600	0.25	6000	1	114.0
1PMT5954Be3	160	2.3	700	0.25	6500	1	121.6
1PMT5955Be3	180	2.1	900	0.25	7000	1	136.8
1PMT5956Be3	200	1.9	1200	0.25	8000	1	152.0

Note 1: Product shown has a standard tolerance of $\pm 5\%$ on the nominal zener voltage. Also available in 2% and 1% tolerance with suffix C and D respectively. V_Z is measured at I_{ZT} with TC (TAB 1) at 30°C. Voltage measurement to be performed 20 seconds after application.

Note 2: Zener impedance is derived by superimposing on I_{ZT} a 60 Hz rms ac current equal to 10% of I_{ZT} .

Note 3: Based upon 1W maximum power dissipation. Allowance has been made for the higher voltage associated with operation at higher currents and temperature. For determination of voltage change with current deviations from I_{ZT} see MicroNote 202.

Powermite 1 Ultra Fast Rectifiers

MSCC Part Number	Maximum Reverse Voltage	Max. Average Output Current	Max. Average Output Current	Non-Repetitive Sinusoidal Surge Current (8.3mS)	Forward Voltage Drop	Maximum Reverse Current	Trr I _F =0.5A, I _R =1.0A I _{REC} =0.25A
	V	T _{TAB} =75°C	T _{TAB} =75°C	I	V _F @ I _F	I _R @ V _R	nSec
UPR5e3	50V	2.5A	2.5A	25A	0.975V @ 2A	2.0 uA @ 50V	25ns
UPR10e3	100V	2.5A	2.5A	25A	0.975V @ 2A	2.0 uA @ 100V	25ns
UPR15e3	150V	2.5A	2.5A	25A	0.975V @ 2A	2.0 uA @ 150V	25ns
UPR20e3	200V	2.0A	2.0A	20A	1.25V @ 1.0A	10.0 uA @ 200V	50ns
UPR30e3	300V	2.0A	2.0A	20A	1.25V @ 1.0A	10.0 uA @ 300V	50ns
UPR40e3	400V	2.0A	2.0A	20A	1.25V @ 1.0A	10.0 uA @ 400V	50ns

Powermite 1 PIN Diodes, 2.5W

MSCC Part Number	Maximum Reverse Voltage	Typical Series Resistance R _S	Typical Series Resistance R _S	Capacitance C _T	Typical Parallel Resistance R _P	Minimum Carrier Lifetime t	Maximum Forward Voltage V _F
	V	Ohms	Ohms	pF	KOhms	uS	V
UPP1001e3	100	0.75	0.75	1.2	8	2	1.0
UPP1002e3	200	0.75	0.75	1.2	8	2	1.0
UPP1004e3	400	0.75	0.75	1.2	8	2	1.0
UPP9401e3	50	0.75	0.75	0.75	10	1	1.0

Powermite 1 Schottkys

MSCC Part Number	Peak Repetitive Reverse Voltage	Max. Average Rectified Current	Peak Forward Surge Current	Forward Voltage Drop	Maximum Reverse Current
	V _{RRM}	I _O	I _{FSM}	V _F @ I _F	I _R @ V _R
UPS115Ue3	15V	1.0A	50A	0.22V @ 1.0A	10mA @ 15V
UPS120e3	20V	1.0A	50A	0.45 V @ 1.0A	0.4mA @ 20 V
UPS120e3	20V	1.0A	50A	0.53 V @ 1.0 A	10 μA @ 20 V
UPS5817e3	20V	1.0A	50A	0.45 V @ 1.0 A	1.0 mA @ 20 V
UPS140e3	40V	1.0A	50A	0.45 V @ 1.0 A	0.4mA @ 40 V
UPS5819e3	40V	1.0A	50A	0.55 V @ 1.0 A	1.0 mA @ 40 V

UPS120-140 UPS120E-140E



Low V_F 1A, 20-40V Schottky
Low I_R 1A, 20-40V Schottky

Both Series Feature:

- Ultra Low profile (<1.1mm high)
- Low thermal resistance
- 1/3 the size of competing products

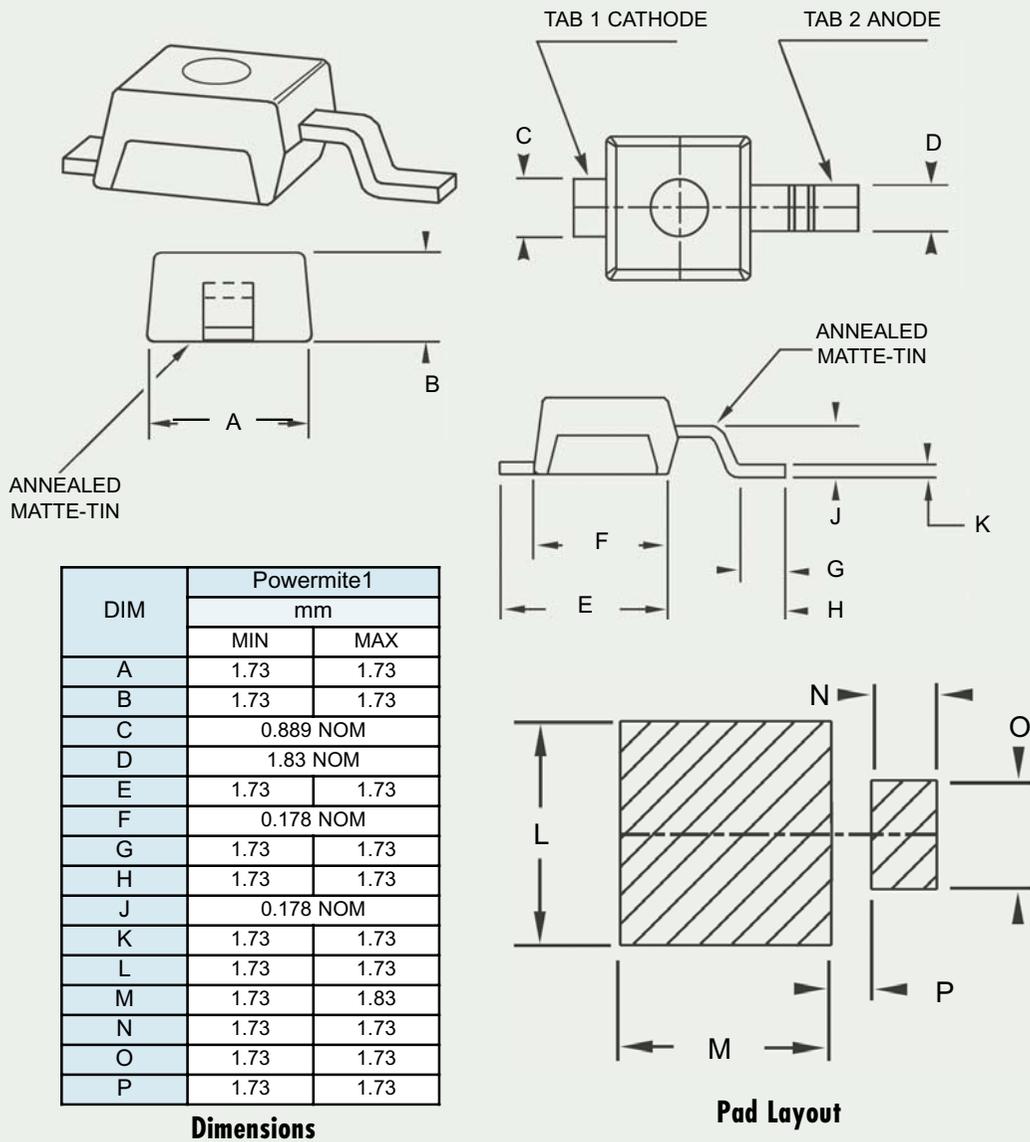
UPS120-140 Series Feature:

- Ultra Low V_F of 0.45V at 1A
- Ideal for efficient power supplies

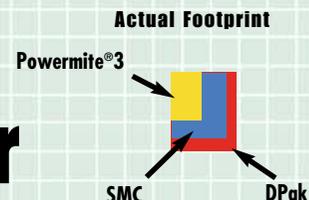
UPS 120E and 140E Series Feature:

- Ultra Low I_R of 400μA at 20 Volts
- Ideal for portable battery chargers

Powermite 1 Specifications



Powermite 3: Small Size, Greater Power



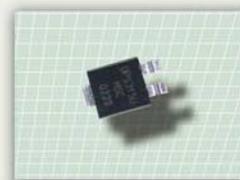
With three leads and a slightly larger footprint, Microsemi's new Powermite 3 package provides all of the thermal impedance and thermal resistance advantages of the original Powermite in a 1.1 mm x 5.3 mm x 4.8 mm design having power capabilities previously available only in much larger D-PAK and TO-220 devices.

Powermite 3 devices include 8 Amp Power Schottkys and UltraFast Rectifiers, 500 and 1000 Volt 1 Amp MOSFETs, High Speed Silicon Controlled Rectifiers, and 1500W Zener Diodes.

UPS1040 High Density 10 Amp Power Schottky

Features:

- 10 Amp, 40 V Schottky barrier rectifier
- Low 1.1mm profile (max)
- 16.51 mm² footprint
- Low V_F for higher efficiency
- Low thermal resistance
- Patented heat sink design



Applications:

- DC-DC converters
- Battery charge regulation
- Low voltage/high frequency inverters
- Free wheeling and steering diodes

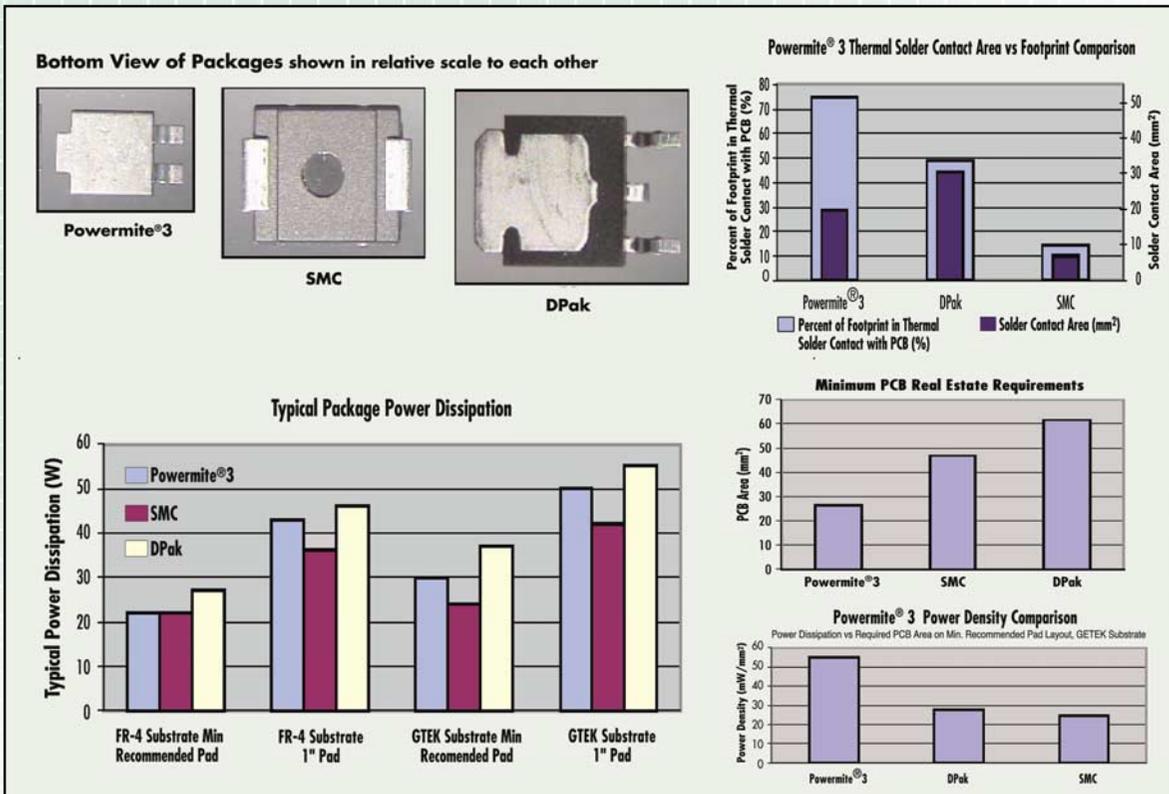
Powermite 3 Mosfet (N-Channel)

MSCC Part Number	Drain to Source Breakdown Voltage	Gate to Source Voltage	Continuous Drain Current @ 25°C	Drain to Source ON-State Resistance (typical)	Total Gate Charge (typical) $V_{GS} = 10V$	Gate to Drain Charge (typical) $I_D = 10ma$
	BV_{DSS}	V_{GS}	I_{D1}	$R_{DS(on)1}$	Q_G	Q_{GD}
UPF1N50e3	500	±20	1.0A	2.7 Ohms (1)	20 nC	10 nC
UP1N100e3	1000	±20	1.0A	12.5 Ohms (1)	20 nC	10 nC

Powermite 3 Schottkys

MSCC Part Number	Peak Repetitive Reverse Voltage	Max. Average Rectified Current	Peak Forward Surge Current	Forward Voltage Drop	Maximum Reverse Current	Device Configuration
	V_{RRM}	I_o	I_{FSM}	$V_F @ I_F$	$I_R @ V_R$	
UPS315e3	15V	3.0A	150A	0.22 V @ 1.0 A	2 mA @ 15 V	Single
UPS340e3	40V	3.0A	100A	0.50 V @ 3.0 A	0.5 mA @ 40 V	Single
UPS360e3	60V	3.0A	100A	0.63 V @ 3.0 A	0.2 mA @ 60 V	Single
UPS3100e3	100V	3.0A	100A	0.78 V @ 3.0 A	0.2 mA @ 100 V	Single
UPS540e3	40V	5.0A	100A	0.54 V @ 5.0 A	0.5 mA @ 40 V	Single
UPS560e3	60V	5.0A	100A	0.66 V @ 5.0 A	0.2 mA @ 60 V	Single
UPS5100e3	100V	5.0A	100A	0.87 V @ 5.0 A	0.2 mA @ 100 V	Single
UPS5100He3	100V	5.0A	100A	0.70 V @ 5.0 A	3.5 uA @ 100 V	Single
UPS615e3	15V	6.0A	300A	0.22 V @ 6.0 A	4.0 mA @ 15 V	Single
UPS6150e3	150V	6.0A	225A	0.65 V @ 6.0 A	100µA @ 150 V	Single
UPS760e3	60V	7.0A	200A	0.60 V @ 7.0 A	0.1 mA @ 60 V	Single
UPS835Le3	35V	8.0A	75A	0.51 V @ 8.0 A	1.4 mA @ 35 V	Single
UPS840e3	40V	8.0A	150A	0.45 V @ 8.0 A	5.0 mA @ 40 V	Single
UPS1040e3	40V	10.0A	150A	0.51 V @ 10.0 A	0.3 mA @ 35 V	Single
UPS1040CTe3	40V	10.0A	50A	0.48 V @ 5.0 A	0.15 mA @ 35 V	Dual

The Powermite 3 Performance Advantage



UPGA301 and UPGA350 Series

High Speed Silicon Controlled Rectifier

The UPGA301 and UPGA350 Series are nanosecond SCR switches designed for narrow pulse switching applications where size and current handling capability are critical. They may be triggered using low power logic drivers (+0.8 V at 200mA). The Powermite 3 package provides high reliability and wire bond connections able to deliver high current surge capability.

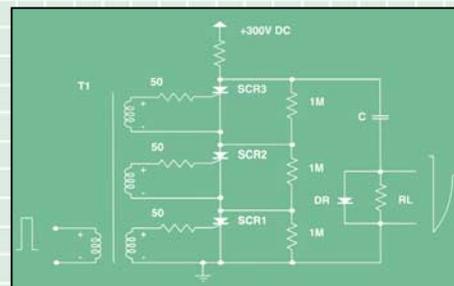
Epoxy packaged, oxide passivated planar SCR chips with metallurgic bonds on both sides to achieve high reliability. Internal wire bond connection allows high current surge capability for narrow pulse applications.

Applications

- Laser Range finders
- Photo-flash circuits
- Automotive collision avoidance systems

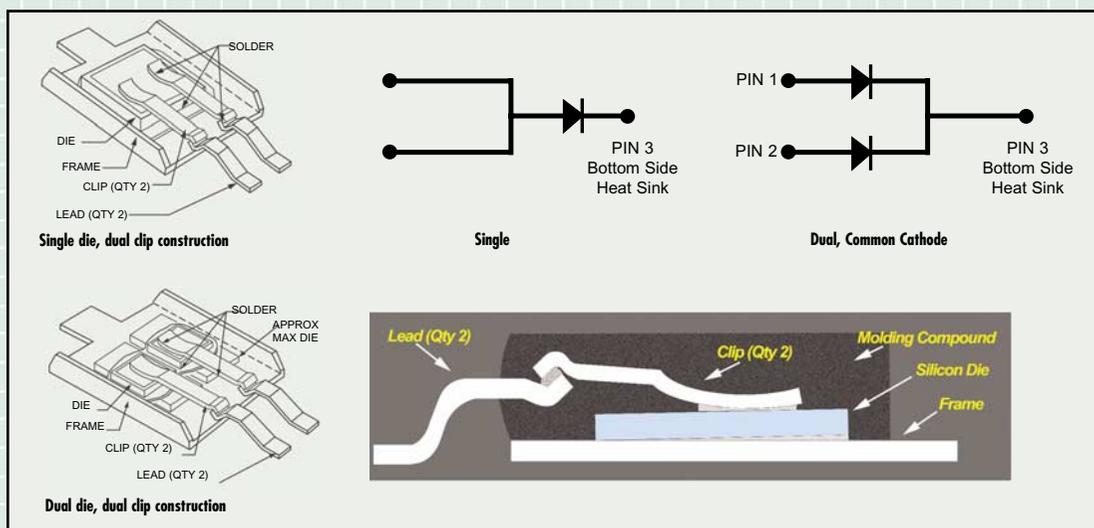
Features:

- Small mechanical outline
- High speed switching
- Logic drive capability
- Small 16.51 mm² footprint
- Supplied in 6K-unit 16mm surface mount tape and reel
- Choice of 60 V or 125 V repetitive peak off-state voltage
- Available in 16mm Tape and Reel, 6000 units/reel



Powermite3

Internal Configurations



Typical Powermite Qualification Data

Reliability test	Test Method	Conditions	SS	Rejects	%Def	Remarks
HTRB (Life Test)	MIL-STD-750, Method 1038A	T _a = 125 deg C V _R = 32 Vdc Duration = 1000 Hours	125 Units	0	0%	Completed
Autoclave	JESD22-A102-C	121 deg C, 29.7 psia RH = 100% 96 hours	77 Units	0	0%	Completed
Temperature Cycling	MIL-STD-750, Method 1051	Temp: -65 to +150°C Duration: 200 cycles	125 Units	0	0%	Completed
Constant Acceleration	MIL-STD-750, Method 2006	Y1 Direction 15,000 G's Minimum	77 Units	0	0%	Completed
Variable Frequency Vibration	MIL-STD-750, Method 2056	50 G's Minimum 100Hz to 2kHz	77 Units	0	0%	Completed
Mechanical Shock	MIL-STD-750, Method 2016	Non-Operating , 1500 G's, 0.5 ms duration, 5 Blows in each orientation (X1, Y1, Z1)	77 Units	0	0%	Completed
Resistance to Solder Heat	MIL-STD-750, Method 2031	Temp. : 260±5°C t = 10 +2/-0 sec.	77 Units	0	0%	Completed
Die Shear	MIL-STD-750, Method 2017	Per Method 2017	10 Units	0	0%	Completed
Forward Surge Current	MIL-STD-750, Method 4066	T _A =25 deg C I _O = 8.0 Amps Minimum I _{FSM} = 150 Amps Minimum t _p = 8.3 ms 10 surges at 1 minute intervals	10 Units	0	0%	Completed

Cross Reference

Schottky

On Semi Part Number	MSCC Part Number	Peak Repetitive Reverse Voltage	Max. Average Rectified Current	Peak Forward Surge Current	Forward Voltage Drop	Maximum Reverse Current
		V_{RRM}	I_o	I_{FSM}	$V_F @ I_F$	$I_R @ V_R$
MBRM120	UPS120	20V	1.0A	50A	0.45 V @ 1.0A	0.4mA @ 20 V
MBRM120E	UPS120E	20V	1.0A	50A	0.53 V @ 1.0 A	10 uA @ 20 V
MBRM120	UPS5817	20V	1.0A	50A	0.45 V @ 1.0 A	1.0 mA @ 20 V
MBRM140	UPS140	40V	1.0A	50A	0.45 V @ 1.0 A	0.4mA @ 40 V
MBRM140	UPS5819	40V	1.0A	50A	0.55 V @ 1.0 A	1.0 mA @ 40 V

3W Zener Diodes

On Semi Part Number	MSCC Part Number	Zener Voltage (1) V_Z	Zener Test Current I_{ZT}	Dynamic Impedance (2) Z_{ZT}	Knee Current I_{ZK}	Knee Impedance Z_{ZK}	Reverse Current I_R (MAX)	Reverse Voltage V_R	Max Zener Current 3 I_{ZM}
		V	mA	Ohms	mA	Ohms	u Adc	VOLTS	mA
	1PMT5913B	3.3	113.6	10.0	1.0	500	100	1.0	749.1
	1PMT5914B	3.6	104.2	9.0	1.0	500	75	1.0	686.4
	1PMT5915B	3.9	96.1	7.5	1.0	500	25	1.0	633.6
	1PMT5916B	4.3	87.2	6.0	1.0	500	5	1.0	547.2
	1PMT5917B	4.7	79.8	5.0	1.0	500	5	1.5	526.4
	1PMT5918B	5.1	73.5	4.0	1.0	350	5	2.0	481.8
	1PMT5919B	5.6	66.9	2.0	1.0	250	5	3.0	432.3
1PMT5920B	1PMT5920B	6.2	60.5	2.0	1.0	200	5	4.0	397.7
1PMT5921B	1PMT5921B	6.8	55.1	2.5	1.0	200	5	5.2	363.0
1PMT5922B	1PMT5922B	7.5	50	3.0	0.5	400	5	6.0	330.0
1PMT5923B	1PMT5923B	8.2	45.7	3.5	0.5	400	5	6.5	300.3
1PMT5924B	1PMT5924B	9.1	41.2	4.0	0.5	500	5	7.0	270.6
1PMT5925B	1PMT5925B	10	37.5	4.5	0.25	500	5	8.0	247.5
	1PMT5926B	11	34.1	5.5	0.25	550	1	8.4	224.4
1PMT5927B	1PMT5927B	12	31.2	6.5	0.25	550	1	9.1	206.2
	1PMT5928B	13	28.8	7.0	0.25	550	1	9.9	189.8
1PMT5929B	1PMT5929B	15	25.0	9.0	0.25	600	1	11.4	165.0
1PMT5930B	1PMT5930B	16	23.4	10	0.25	600	1	12.2	153.5
1PMT5931B	1PMT5931B	18	20.8	12	0.25	650	1	13.7	68.5
	1PMT5932B	20	18.7	14	0.25	650	1	15.2	123.8
1PMT5933B	1PMT5933B	22	17.0	17.5	0.25	650	1	16.7	112.2
1PMT5934B	1PMT5934B	24	15.6	19	0.25	700	1	18.2	102.3
1PMT5935B	1PMT5935B	27	13.9	23	0.25	700	1	20.6	90.8
1PMT5936B	1PMT5936B	30	12.5	28	0.25	750	1	22.8	82.5
	1PMT5937B	33	11.4	33	0.25	800	1	25.1	74.3
	1PMT5938B	36	10.4	38	0.25	850	1	27.4	67.7
1PMT5939B	1PMT5939B	39	9.6	45	0.25	900	1	29.7	62.7
	1PMT5940B	43	8.7	53	0.25	950	1	32.7	56.1
1PMT5941B	1PMT5941B	47	8.0	67	0.25	1000	1	35.8	51.2
	1PMT5942B	51	7.3	70	0.25	1100	1	38.8	47.9
	1PMT5943B	56	6.7	86	0.25	1300	1	42.6	42.9
	1PMT5944B	62	6.0	100	0.25	1500	1	47.1	38.6
	1PMT5945B	68	5.5	120	0.25	1700	1	51.2	36.3
	1PMT5946B	75	5.0	140	0.25	2000	1	56.0	33.0
	1PMT5947B	82	4.6	160	0.25	2500	1	62.2	29.7
	1PMT5948B	91	4.1	200	0.25	3000	1	69.2	26.4
	1PMT5949B	100	3.7	250	0.25	3100	1	76.0	24.8
	1PMT5950B	110	3.4	300	0.25	4000	1	83.6	21.5
	1PMT5951B	120	3.1	380	0.25	4500	1	91.2	19.8
	1PMT5952B	130	2.9	450	0.25	5000	1	98.8	18.1
	1PMT5953B	150	2.5	600	0.25	6000	1	114.0	16.5
	1PMT5954B	160	2.3	700	0.25	6500	1	121.6	14.9
	1PMT5955B	180	2.1	900	0.25	7000	1	136.8	13.2
	1PMT5956B	200	1.9	1200	0.25	8000	1	152.0	11.6

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Diodes Inc Part Number	MSCC Part Number	Peak Repetitive Reverse Voltage	Max. Average Rectified Current	Peak Forward Surge Current	Forward Voltage Drop	Maximum Reverse Current	Device Configuration
		V_{RRM}	I_o	I_{FSM}	$V_F @ I_F$	$I_R @ V_R$	
SBM340	UPS340	40V	3.0A	100A	0.50 V @ 3.0 A	0.5 mA @ 40 V	Single
MBRM360	UPS360	60V	3.0A	100A	0.63 V @ 3.0 A	0.2 mA @ 60 V	Single
MBRM3100	UPS3100	100V	3.0A	100A	0.78 V @ 3.0 A	0.2 mA @ 100 V	Single
SBM540	UPS540	40V	5.0A	100A	0.54 V @ 5.0 A	0.5 mA @ 40 V	Single
MBRM560	UPS560	60V	5.0A	100A	0.66 V @ 5.0 A	0.2 mA @ 60 V	Single
MBRM5100	UPS5100	100V	5.0A	100A	0.87 V @ 5.0 A	0.2 mA @ 100 V	Single
MBRM5100H	UPS5100H	100V	5.0A	100A	0.70 V @ 5.0 A	3.5 uA @ 100 V	Single
MBRM760	UPS760	60V	7.0A	200A	0.60 V @ 7.0 A	0.1 mA @ 60 V	Single
SBM835L	UPS835L	35V	8.0A	75A	0.51 V @ 8.0 A	1.4 mA @ 35 V	Single
	UPS840	40V	8.0A	150A	0.45 V @ 8.0 A	5.0 mA @ 40 V	Single
SBM1040	UPS1040	40V	10.0A	150A	0.51 V @ 10.0 A	0.3 mA @ 35 V	Single
SBM1040CT	UPS1040CT	40V	10.0A	50A	0.48 V @ 5.0 A	0.15 mA @ 35 V	Dual



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