

UPS140

SURFACE MOUNT 1A SCHOTTKY RECTIFIER POWERMITE® Power Surface Mount Package

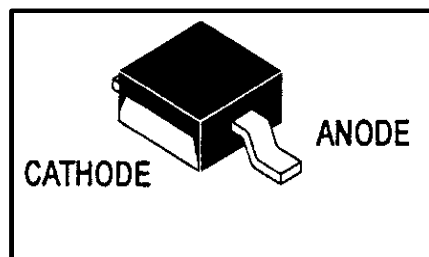
Features:

- Low Profile -- Maximum Height of 1.1 mm
- Small Footprint -- Footprint Area of 8.45 mm²
- Low V_F Provides Higher Efficiency and Extends Battery Life
- Supplied in 12 mm Tape and Reel -- 12,000 Units per Reel
- Low Thermal Resistance with Direct Thermal Path of Die on Exposed Cathode Heat Sink

Mechanical Characteristics:

- Powermite is JEDEC Registered as DO-216AA
- Case: Molded Epoxy
- Epoxy Meets UL94, VO at 1/8"
- Weight: 62 mg (approximately)
- Device Marking: S40
- Lead and Mounting Surface Temperature for Soldering Purposes, 260°C Maximum for 10 Seconds

**SCHOTTKY BARRIER
RECTIFIER
1.0 AMPERES
40 VOLTS**



Description:

The UPS140 Powermite Schottky rectifier is designed to offer optimized forward voltage characteristics for battery powered portable products such as cellular and cordless phones, chargers, notebook computers, printers, PDA's and PCMCIA cards. Typical applications include ac/dc and dc-dc converters, reverse battery protection and "Oring" of multiple supply voltages.

The Powermite's patented heat sink design offers the same thermal performance rating as an SMA while being 50% smaller in footprint area and less than 1 mm in overall height. The result is a unique, highly efficient Schottky rectifier in a space saving surface mount package.

Maximum Ratings

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
Average Rectified Forward Current (At Rated V_R , $T_C = 135^\circ\text{C}$)	I_O	1.0	A
Peak Repetitive Forward Current (At Rated V_R , Square Wave, 100 KHz, $T_C = 135^\circ\text{C}$)	I_{FRM}	2.0	A
Non-Repetitive Peak Surge Current (Non-Repetitive peak surge current, halfwave, single phase, 60 Hz)	I_{FSM}	50	A
Storage / Operating Case Temperature	T_{stg}, T_C	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature	T_J	-55 to 125	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R , $T_J = 25^\circ\text{C}$)	dv/dt	10,000	V/ μs

Thermal Characteristics

Thermal Resistance - Junction-to-Lead (Anode) (1)	R_{tj}	35	$^\circ\text{C/W}$
Thermal Resistance - Junction-to-Tab (Cathode) (1)	R_{tjtab}	15	
Thermal Resistance - Junction-to-Ambient (1)	R_{tja}	248	

(1) Pulse Test: Pulse Width $\leq 250 \mu\text{s}$, Duty Cycle $\leq 2\%$.

Electrical Characteristics

Maximum Instantaneous Forward Voltage (1) ($I_F = 0.1 \text{ A}$) ($I_F = 1.0 \text{ A}$) ($I_F = 3.0 \text{ A}$)	V_F	$T_J = 25^\circ\text{C}$	V
		0.36	
		0.45	
Maximum Instantaneous Reverse Current ($V_R = 40 \text{ V}$)	I_R	$T_J = 25^\circ\text{C}$	mA
		0.40	

(1) Pulse Test: Pulse Width $\leq 250 \mu\text{s}$, Duty Cycle $\leq 2\%$.

MECHANICAL DIMENSIONS

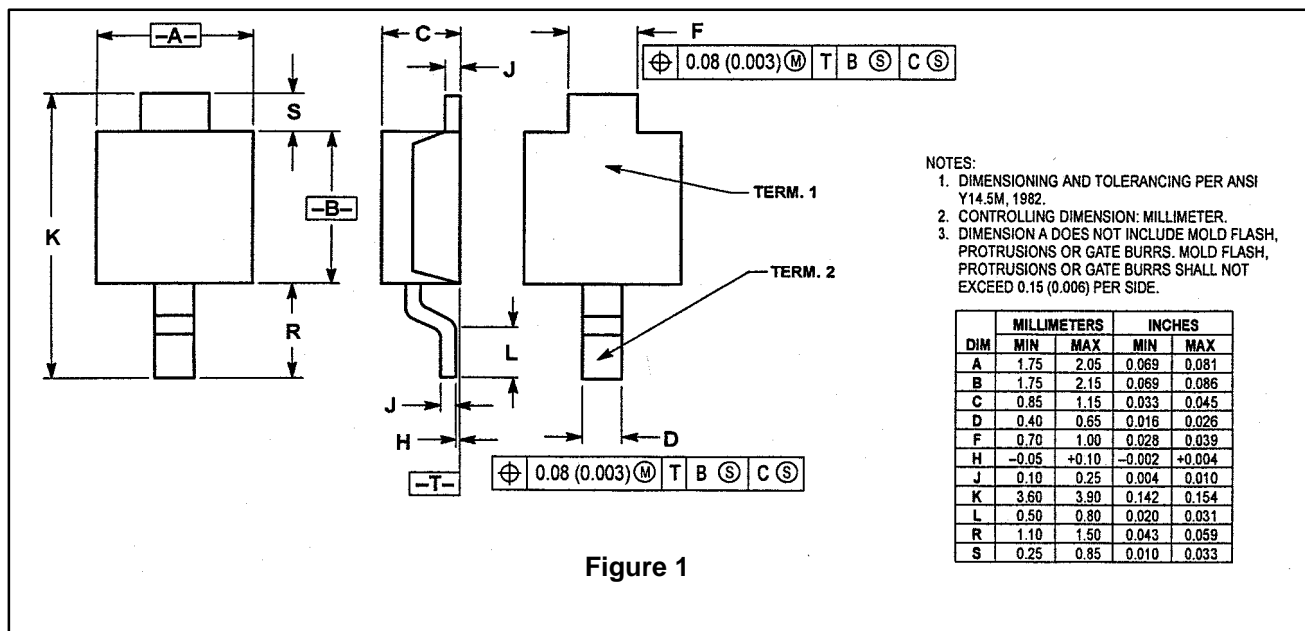


Figure 1