



40 VOLTS, 250 AMPS, 14.5 KW TRANSIENT VOLTAGE SUPPRESSOR

DESCRIPTION

This MSATS14S40L device polarity is anode to strap and the MSATS14S40LR reverse polarity is cathode to strap. This product offers a high surge rating with low thermal resistance in a compact surface mount package. Microsemi also offers numerous other products to meet higher and lower power voltage regulation applications.

Important: For the latest information, visit our website <http://www.microsemi.com>.

FEATURES

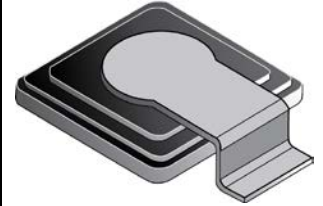
- Very high surge rating – 14,500 watts peak power at 10/1000 μ s.
- Hermetically sealed, low profile, ceramic, surface mount power package.
- Available in both forward and reverse polarities.
- RoHS compliant versions are available.

APPLICATIONS / BENEFITS

- Low package inductance.
- Very low thermal resistance.
- Mechanically rugged.

MAXIMUM RATINGS @ +25 °C, unless otherwise noted

Parameters / Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature Range	T_j and T_{stg}	-65 to +175	°C
Thermal Resistance, Junction to Case:	$R_{\theta JC}$	0.2	°C/W
$t_{clamping}$ @ 0 volts to $V_{(BR)}$ min (theoretical)		<1	ps
Peak Pulse Power (1ms)	P_{PP}	14,500	W



**ThinKey™ 3
Package**

MSC – Lawrence

6 Lake Street,
Lawrence, MA 01841
Tel: 1-800-446-1158 or
(978) 620-2600
Fax: (978) 689-0803

MSC – Ireland

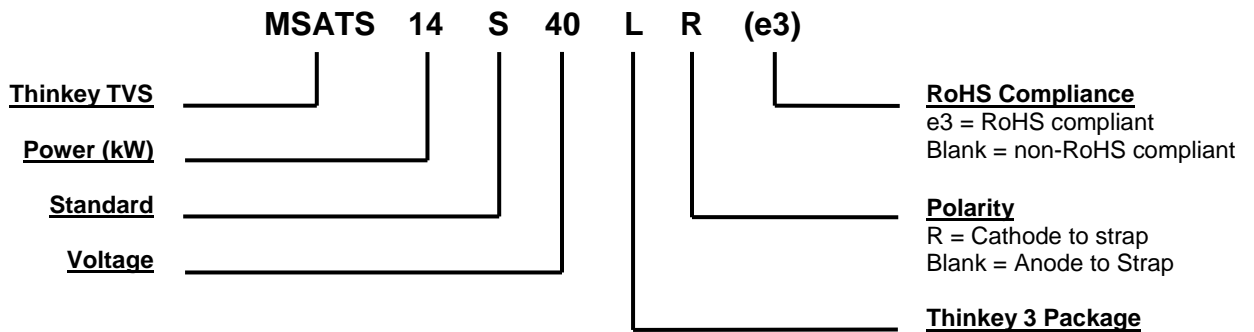
Gort Road Business Park,
Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044
Fax: +353 (0) 65 6822298

Website:

www.microsemi.com

MECHANICAL and PACKAGING

- CASE: Ceramic-molybdenum Thinkey 3.
- TERMINALS: SnPb solder or RoHS compliant matte/tin coated.
- MARKING: Part number and polarity symbol.
- POLARITY: Standard is anode to strap. Reverse is cathode to strap.
- WEIGHT: Approximately 1.7 grams.
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE

SYMBOLS & DEFINITIONS

Symbol	Definition
I_{BR}	Breakdown current.
t_p	Pulse time.
t_r	Rise time.

ELECTRICAL CHARACTERISTICS @ +25 °C, unless otherwise noted

Parameters / Test Conditions	Symbol	Min.	TYP.	Max.	Unit
Breakdown Voltage: $I_{(BR)} = 1 \text{ mA}$	$V_{(BR)}$	40	43		V
Rated Standoff Voltage:	V_R	36			V
Reverse Leakage: $V_R = 36 \text{ V}$	I_R		0.3	5	μA
Peak Pulse Current: $t_r = 10 \mu\text{s}$, $t_p = 1 \text{ ms}$ (see Figure 1)	I_{PP}			250	A
Clamping Voltage: $I_{PP} = 250 \text{ A}$ $t_r = 10 \mu\text{s}$, $t_p = 1 \text{ ms}$	V_{C1}		55	58	V
$I_{PP} = 200 \text{ A}$ $t_r = 6 \mu\text{s}$, $t_p = 70 \mu\text{s}$	V_{C2}		48	51	V

GRAPHS

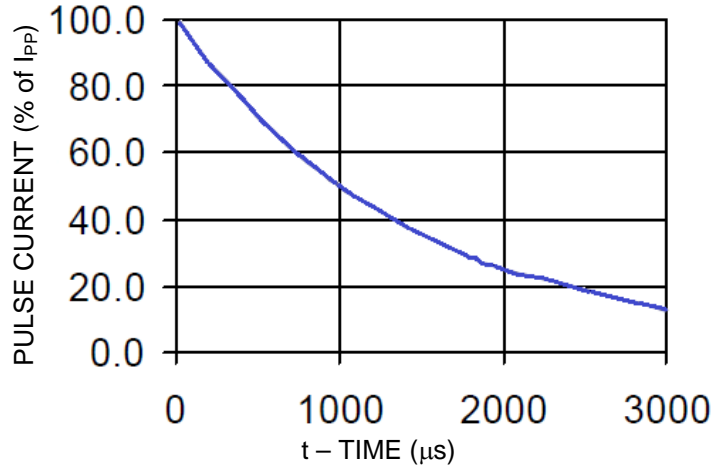


FIGURE 1
Pulse Waveform

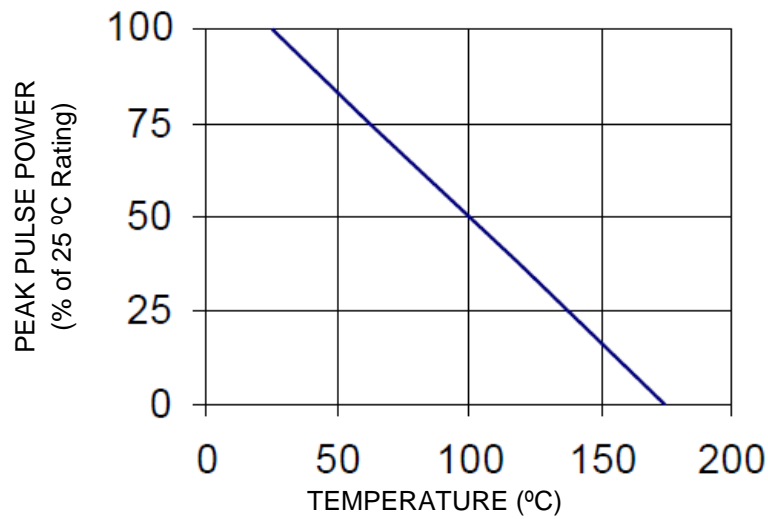
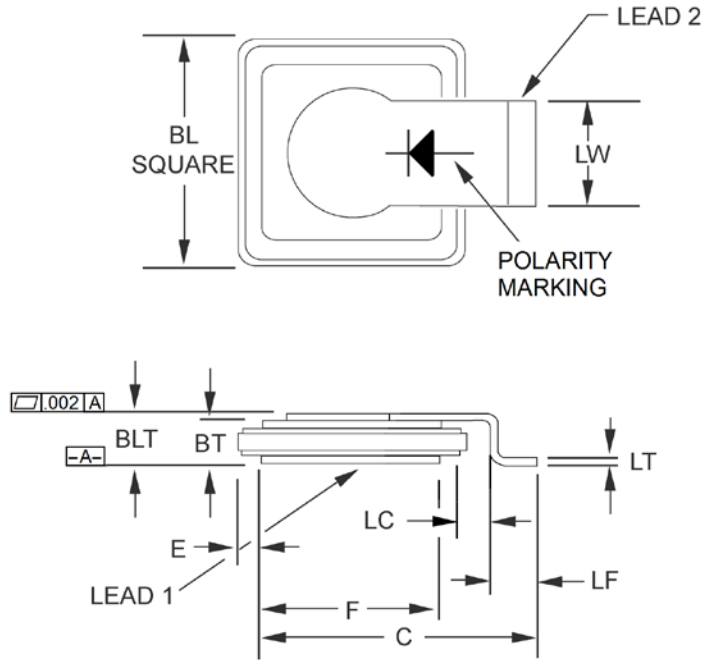


FIGURE 2
Derating Curve

PACKAGE DIMENSIONS


Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
BL	.420	.440	10.67	11.18
BT		.115		2.92
BLT		.125		3.18
C	.469	.509	11.91	12.93
E	.038 NOM		.97 NOM	
F	.331	.341	8.41	8.66
LC	.040 NOM		1.02 NOM	
LF	.055	.075	1.40	1.91
LT	.005	.015	.127	.381
LW	.185	.215	4.70	5.46

NOTES:

1. Primary dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

PAD LAYOUT
