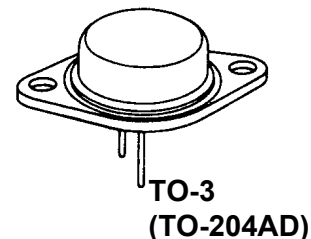


DESCRIPTION

This LDS series is used in automotive and vehicular applications where further protection may be required for load-dump and field-decay transients. This type of protection is needed when the battery is disconnected while the engine and alternator are still operating. This produces prolonged severe transients requiring additional transient voltage suppressor design considerations beyond those ratings specified for other conventional TVS components.

APPEARANCE


IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

FEATURES

- Unidirectional TVS series for DC power applications
- Low Clamping ratio
- Working voltage (V_{WM}) range of 14 volts to 48 volts
- Hermetically sealed TO-3 package
- Low thermal resistance
- Dissipates heat from prolonged transients
- Consult factory for other package options including surface mount

APPLICATIONS / BENEFITS

- **LDS 14 Series** – Designed for a standard 12 volt power system.
- **LDS 24 Series** – Designed for a standard 12 volt power system capable of sustaining a 24 volt (double voltage) jump start.
- **LDS 30 Series** – Designed for a standard 24 volt power system.
- **LDS 48 Series** – Designed for a standard 24 volt power system capable of sustaining a 48 volt (double voltage) jump start.

MAXIMUM RATINGS

- 3000 Watts of Peak Pulse Power dissipation at 50 ms (see Figure 1)
- $t_{clamping}$ (0 volts to $V_{(BR)}$ min.): Less than 100 pico seconds (theoretical)
- Storage temperature: -50°C to $+200^{\circ}\text{C}$
- Operating temperature: -50°C to 175°C (Figure 3)
- Forward surge rating: 200 amps, 8.3ms at 25°C
- Steady state power dissipation: 50 watts, $T_c = 25^{\circ}\text{C}$
- Thermal resistance: Less than 1°C/W
- Repetition Rate (duty cycle): 0.1%

MECHANICAL AND PACKAGING

- CASE: Industry standard TO-3 (TO-204AD) hermetically sealed, .052 inch diameter pins.
- FINISH: All external surfaces are corrosion resistant and terminals solderable.
- POLARITY: Standard polarity anode to case.
- WEIGHT: 15 grams (approx.).
- MOUNTING HARDWARE: Consult factory for optional insulator and sheet metal screws
- See package dimensions on last page

ELECTRICAL CHARACTERISTICS

MICROSEMI PART NUMBER	REVERSE STANDOFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE $V_{(BR)}$ @ 20mA VOLTS	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C VOLTS	MAXIMUM SURGE CURRENT (FIG. 2) @ I_{PP} AMPS	MAXIMUM REVERSE CURRENT @ V_{WM} I_D μA	MAXIMUM VOLTAGE TEMP. VARIATION V_{BR} mV/C
LDS 14	14.0	16.0	26.0	115.5	100.0	19.0
LDS 14A	14.0	16.0	23.5	128.0	100.0	17.0
LDS 24	24.0	26.5	43.0	70.0	100.0	31.0
LDS 24A	24.0	26.5	39.0	77.0	100.0	29.0
LDS 30	30.0	33.0	54.0	56.0	100.0	39.0
LDS 30A	30.0	33.0	48.5	62.0	100.0	36.0
LDS 48	48.0	53.0	86.0	34.0	100.0	55.0
LDS 48A	48.0	53.0	78.0	38.0	100.0	50.0

GRAPHS AND TEST CIRCUIT

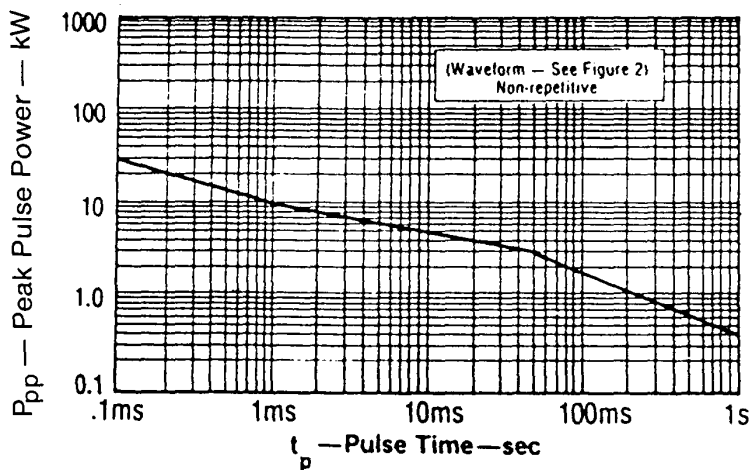
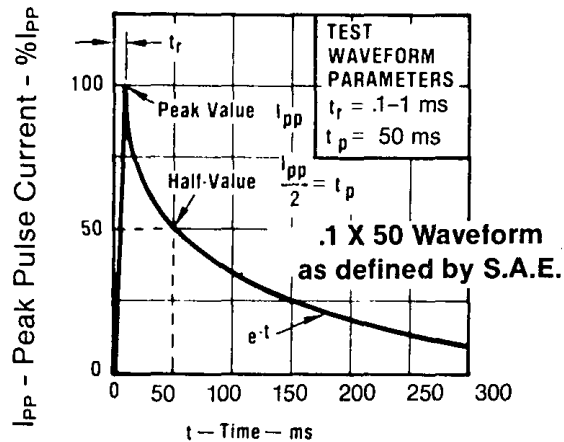


FIGURE 1
Peak Pulse Power vs. Pulse Time @ 25°C



Pulse Wave Form (.1 X 50)

FIGURE 2
Surge Waveform

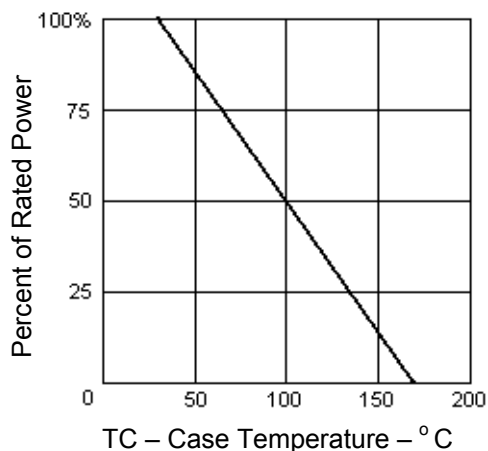


FIGURE 3
Derating Curve

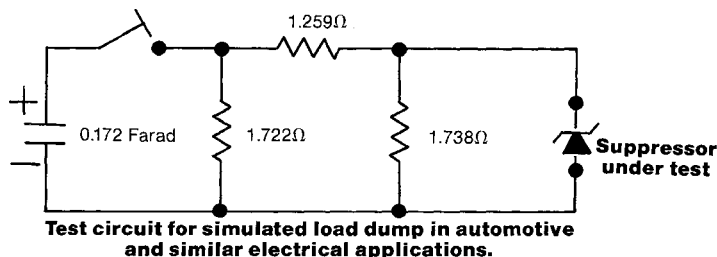


FIGURE 4

PACKAGE DIMENSIONS

