



Micro Commercial Components



Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

## ES1A-L THRU ES1J-L

### Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Built-in strain relief
- Super fast switching speed under 35ns
- Marking : Cathode band and type number (No '-L' Suffix)
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

- Operating Temperature: -65°C to +175°C
- Storage Temperature: -65°C to +175°C

| MCC Part Number | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------------------------------|---------------------|-----------------------------|
| ES1A-L          | 50V                                    | 35V                 | 50V                         |
| ES1B-L          | 100V                                   | 70V                 | 100V                        |
| ES1D-L          | 200V                                   | 140V                | 200V                        |
| ES1G-L          | 400V                                   | 280V                | 400V                        |
| ES1J-L          | 600V                                   | 420V                | 600V                        |

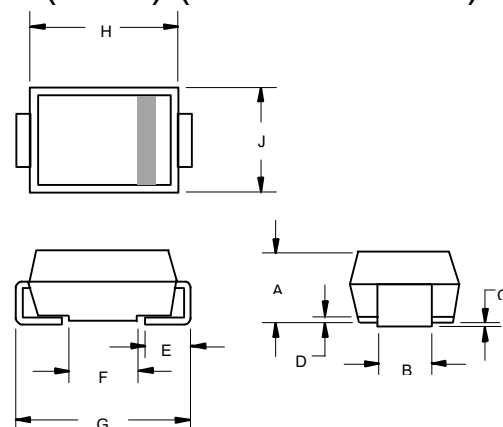
### Electrical Characteristics @ 25°C Unless Otherwise Specified

|                                                                            |             |                                     |                                                       |
|----------------------------------------------------------------------------|-------------|-------------------------------------|-------------------------------------------------------|
| Average Forward Current                                                    | $I_{F(AV)}$ | 1.0A                                | $T_L = 125^\circ\text{C}$                             |
| Peak Forward Surge Current                                                 | $I_{FSM}$   | 30A                                 | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage<br>ES1A-L-ES1D-L<br>ES1G-L<br>ES1J-L | $V_F$       | .95V<br>1.25V<br>1.70V              | $I_{FM} = 1.0A;$                                      |
| Maximum DC Reverse Current At Rated DC Blocking Voltage                    | $I_R$       | 5 $\mu\text{A}$<br>80 $\mu\text{A}$ | $T_A = 25^\circ\text{C}$<br>$T_A = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time                                              | $T_{rr}$    | 35ns                                | $I_F = 0.5A, I_R = 1.0A,$<br>$I_{rr} = 0.25A$         |
| Typical Junction Capacitance                                               | $C_J$       | 15pF                                | Measured at<br>1.0MHz, $V_R = 4.0V$                   |

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7.

## 1 Amp Super Fast Recovery Rectifier 50 to 600 Volts

### DO-214AC (SMA) (LEAD FRAME)



| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .079   | .096 | 2.00 | 2.44 |      |
| B   | .050   | .064 | 1.27 | 1.63 |      |
| C   | .002   | .008 | .05  | .20  |      |
| D   | ---    | .02  | ---  | .51  |      |
| E   | .030   | .060 | .76  | 1.52 |      |
| F   | .065   | .091 | 1.65 | 2.32 |      |
| G   | .189   | .220 | 4.80 | 5.59 |      |
| H   | .157   | .181 | 4.00 | 4.60 |      |
| J   | .090   | .115 | 2.25 | 2.92 |      |

### SUGGESTED SOLDER PAD LAYOUT

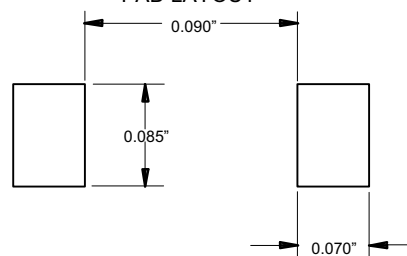


FIG.1-TYPICAL FORWARD CHARACTERISTICS

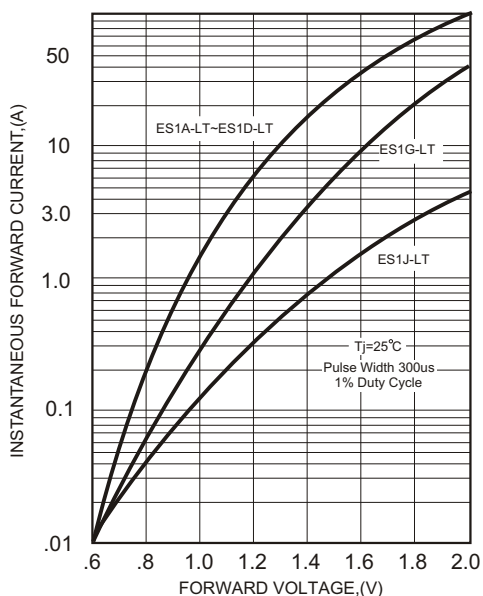


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

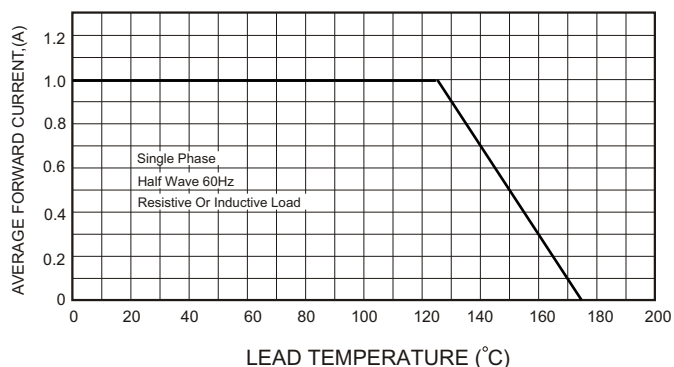
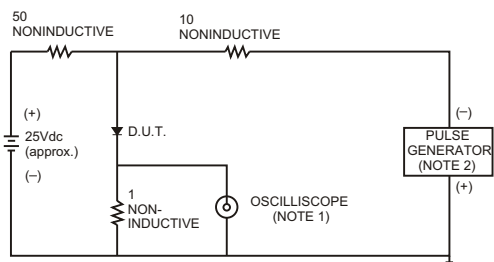


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

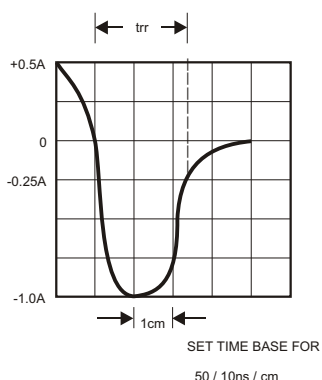


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

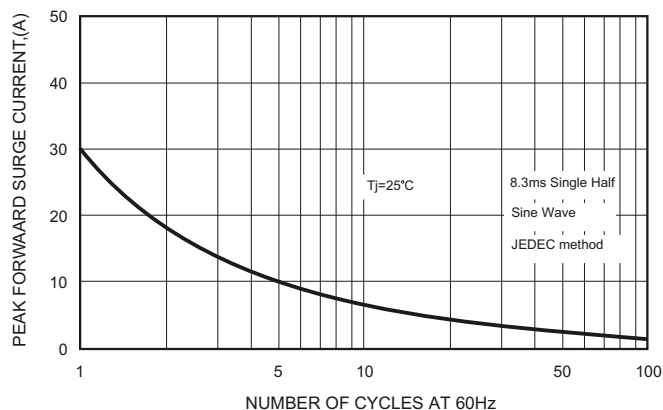
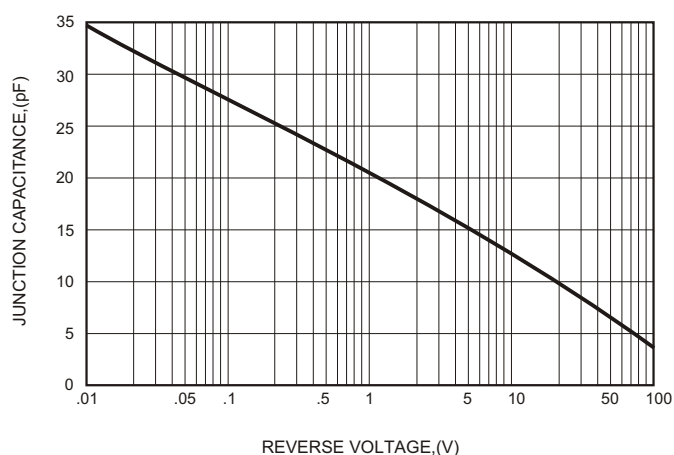


FIG.5-TYPICAL JUNCTION CAPACITANCE



## Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9