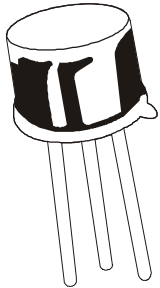


NPN HIGH VOLTAGE SILICON TRANSISTORS

2N3439
2N3440
TO-39



High Voltage Silicon Planar Transistors used in High Voltage & High Power Amplifier Applications.

ABSOLUTE MAXIMUM RATINGS(Ta=25 deg C unless otherwise specified)

| DESCRIPTION | SYMBOL | 2N3439 | 2N3440 | UNITS |
|--|----------|--------|-------------|----------|
| Collector -Emitter Voltage | VCEO | 350 | 250 | V |
| Collector -Base Voltage | VCBO | 450 | 300 | V |
| Emitter -Base Voltage | VEBO | | 7.0 | V |
| Collector Current Continuous | IC | | 1.0 | A |
| Base Current | IB | | 0.5 | A |
| Power Dissipation@ Ta=25 degC | PD | | 1.0 | W |
| Derate Above 25 deg C | | | 5.7 | mW/deg C |
| Power Dissipation@ Tc=25 degC | PD | | 5.0 | W |
| Derate Above 25 deg C | | | 28.6 | mW/deg C |
| Operating And Storage Junction Temperature Range | Tj, Tstg | | -65 to +200 | deg C |

THERMAL RESISTANCE

| | | | | |
|---------------------|----------|--|-----|---------|
| Junction to Ambient | Rth(j-a) | | 175 | deg C/W |
| Junction to Case | Rth(j-c) | | 35 | deg C/W |

ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

| DESCRIPTION | SYMBOL | TEST CONDITION | 2N3439 | 2N3440 | UNITS |
|--------------------------------------|------------|--------------------|--------|--------|-------|
| Collector -Emitter Voltage | VCEO(sus)* | IC=50mA, IB=0 | >350 | >250 | V |
| Collector-Cut off Current | ICBO | VCB=360V, IE=0 | <20 | - | uA |
| | | VCB=250V, IE=0 | - | <20 | uA |
| | ICEO | VCE=300V, IB=0 | <20 | - | uA |
| | | VCE=200V, IB=0 | - | <50 | uA |
| | ICEX | VCE=450V, VBE=1.5V | <500 | - | uA |
| VCE=300V, VBE=1.5V | | - | <500 | uA | |
| Emitter-Cut off Current | IEBO | VEB=6V, IC=0 | <20 | <20 | uA |
| DC Current Gain | hFE* | IC=2mA, VCE=10V | >30 | - | |
| | | IC=20mA, VCE=10V | 40-160 | 40-160 | |
| Collector Emitter Saturation Voltage | VCE(Sat)* | IC=50mA, IB=4mA | <0.5 | <0.5 | V |
| Base Emitter Saturation Voltage | VBE(Sat)* | IC=50mA, IB=4mA | <1.3 | <1.3 | V |

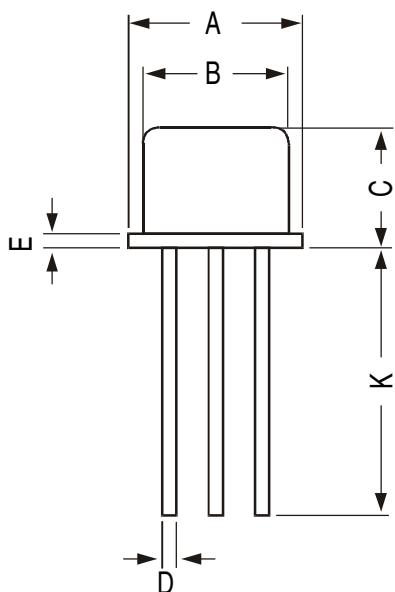
ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)

2N3439/3440

| DESCRIPTION | SYMBOL | TEST CONDITION | 2N3439 | 2N3440 | UNITS |
|-------------------------------------|---------|----------------------------|--------|--------|-------|
| SMALL SIGNAL CHARACTERISTICS | | | | | |
| Small Signal Current Gain. | hfe | IC=5mA, VCE=10V, f=1kHz | >25 | >25 | |
| Output Capacitance | Cob | VCB=10V, IE=0, f=1MHz | <10 | <10 | pF |
| Input Capacitance | Cib | VEB=5V, IC=0, f=1MHz | <75 | <75 | pF |
| Current Gain-Bandwidth Product | ft | IC=10mA, VCE=10V f=5MHz | >15 | >15 | MHz |
| Real Part of Input Impedence | Re(hie) | VCE=10V, IC=5mA f=1MHz | <300 | <300 | ohms |

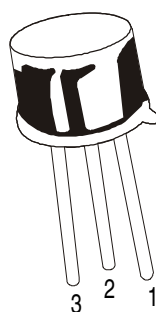
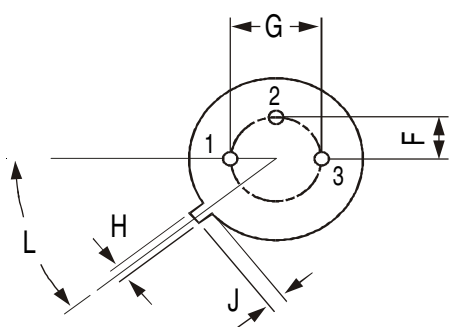
***Pulse Test:- Pulse Width =300us, Duty Cycle=2%**

TO-39 Metal Can Package



All dimensions are in mm

| DIM | MIN | MAX |
|-----|--------|--------|
| A | 8.50 | 9.39 |
| B | 7.74 | 8.50 |
| C | 6.09 | 6.60 |
| D | 0.40 | 0.53 |
| E | — | 0.88 |
| F | 2.41 | 2.66 |
| G | 4.82 | 5.33 |
| H | 0.71 | 0.86 |
| J | 0.73 | 1.02 |
| K | 12.70 | — |
| L | 42 DEG | 48 DEG |



PIN CONFIGURATION

1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|---------|-----------------|----------------|------------------|-------|-------------------|-------|--------|
| | Details | Net Weight/Qty | Size | Qty | Size | Qty | Gr Wt |
| TO-39 | 500 pcs/polybag | 540 gm/500 pcs | 3" x 7.5" x 7.5" | 20.0K | 17" x 15" x 13.5" | 32.0K | 40 kgs |

Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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