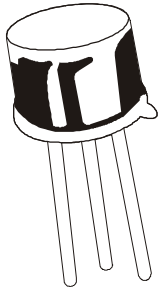


## NPN HIGH VOLTAGE SILICON TRANSISTORS

**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
<b>THERMAL RESISTANCE</b>				
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

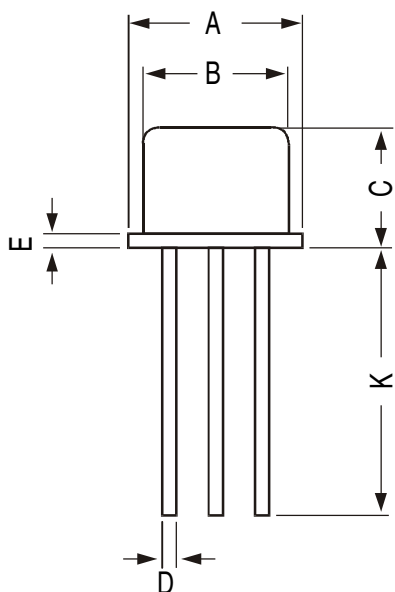
**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

**2N3439/3440**

DESCRIPTION	SYMBOL	TEST CONDITION	2N3439	2N3440	UNITS
<b>SMALL SIGNAL CHARACTERISTICS</b>					
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

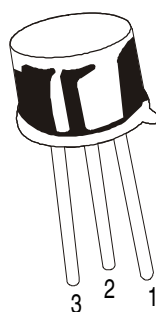
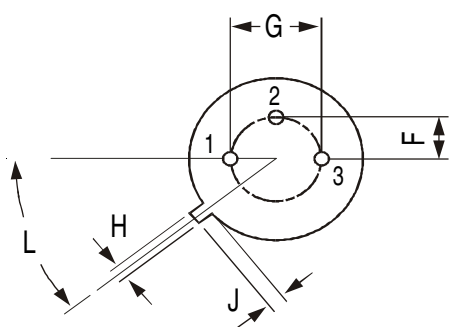
**\*Pulse Test:- Pulse Width =300us, Duty Cycle=2%**

**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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**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290  
e-mail sales@cdil.com www.cdil.com