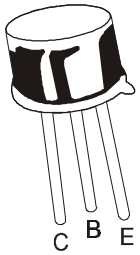
Continental Device India Limited
An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

PNP SILICON POWER SWITCHING TRANSISTOR

2N3868



TO-39
Metal Can Package

Designed for High Speed, Medium Current Switching and High Frequency Amplifier Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Emitter Voltage	V_{CEO}	60	V
Collector Base Voltage	V_{CBO}	60	V
Emitter Base Voltage	V_{EBO}	4.0	V
Collector Current - Continuous Peak	I_C	3.0 10	A A
Base Current	I_B	0.5	A
Power Dissipation at T_c=25ºC Derate Above 25ºC	P_D	6.0 34.3	W mW/ ºC
Power Dissipation at T_a=25ºC Derate Above 25ºC	P_D	1.0 5.71	W mW/ ºC
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200	ºC

THERMAL CHARACTERISTICS

Junction to Case	$R_{th\ (j-c)}$	29	ºC/W
Junction to Ambient in free air	$R_{th\ (j-a)}$	175	ºC/W

ELECTRICAL CHARACTERISTICS (T_c=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0	60		V
Collector Base Voltage	V_{CBO}	I_C=100µA, I_E=0	60		V
Emitter Base Voltage	V_{EBO}	I_E=100µA, I_C=0	4.0		V
Collector Cut Off Current	I_{CEX}	V_{CE}=60V, $V_{BE\ (off)}$=2V		1.0	µA
Collector Cut off Current	I_{CBO}	V_{CB}=60V, I_E=0,T_c=150ºC		150	µA
DC Current Gain	*h_{FE}	I_C=500mA, V_{CE}=1V I_C=1.5A, V_{CE}=2V I_C=2.5A, V_{CE}=3V I_C=3A, V_{CE}=5V	35 30 20 20	150	
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=500mA, I_B=50mA I_C=1.5A, I_B=150mA I_C=2.5A, I_B=250mA		0.50 0.75 1.30	V V V
Base Emitter Saturation Voltage	*$V_{BE\ (sat)}$	I_C=500mA, I_B=50mA I_C=1.5A, I_B=150mA I_C=2.5A, I_B=250mA	0.9	1.0 1.4 2.0	V V V

***Pulse Test: Pulse Width ≤300µs, Duty Cycle ≤2%**

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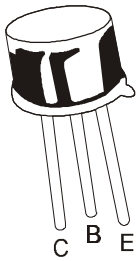

TO-39
Metal Can Package

ELECTRICAL CHARACTERISTICS (T_c=25° C unless specified otherwise)

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Current Gain Bandwidth Product	$^{**}f_T$	I_C=100mA,V_{CE}=5V, f=20MHz	60		MHz
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz		120	pF
Input Capacitance	C_{ib}	V_{EB}=3V, I_C=0, f=0.1MHz		1000	pF

SWITCHING CHARACTERISTICS

Delay Time	t_d	V_{CC}=30V, $V_{BE(off)}$=0, I_C=1.5A, I_{B1}=150mA		35	ns
Rise Time	t_r			65	ns
Storage Time	t_s	V_{CC}=30V, I_C=1.5A, I_{B1}=I_{B2}=150mA		325	ns
Fall Time	t_f			75	ns

**** $f_T = |h_{fe}|. f_{test}$**

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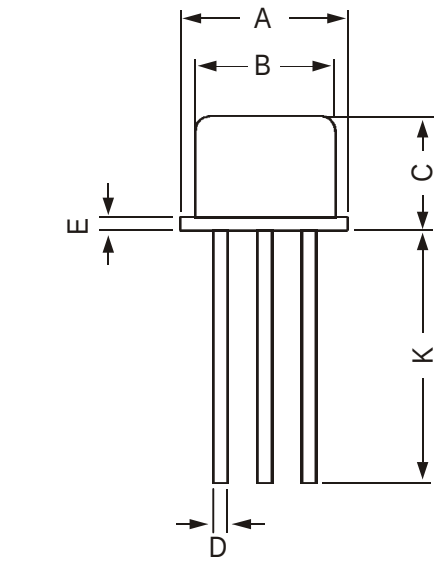
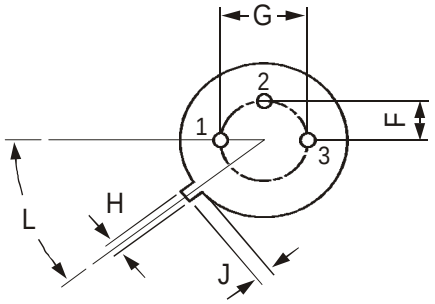
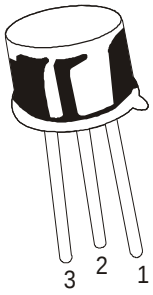


All dimensions are in mm

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"	20K	17" x 15" x 13.5"	32K	40 kgs

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.

2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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Disclaimer

The product information and the selection guides facilitate selection of the CDIL's 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 are 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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