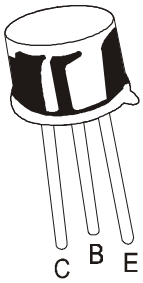
NPN SILICON PLANAR TRANSISTOR

2N2270

TO-39
Metal Can Package



Amplifier Transistor

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V_{CEO}	45	V
Collector Emitter Voltage, $R_{BE} \leq 10\Omega$	V_{CER}	60	V
Collector Base Voltage	V_{CBO}	60	V
Emitter Base Voltage	V_{EBO}	7.0	V
Collector Current Continuous	I_C	1.0	A
Power Dissipation @ T_a=25ºC Derate Above 25ºC	P_D	1.0 5.71	W mW/ ºC
Power Dissipation @ T_c=25ºC Derate Above 25ºC	P_D	5.0 28.6	W mW/ ºC
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200	ºC

THERMAL RESISTANCE

Junction to Ambient in free air	$R_{th\ (j\text{-}a)}$	175	ºC/W
Junction to Case	$R_{th\ (j\text{-}c)}$	35	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0	45			V
Collector Emitter Voltage	V_{CER}	I_C=1mA, R_{BE}=10Ω	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	7			V
Collector Cut Off Current	I_{CBO}	V_{CB}=60V, I_E=0			50	nA
		V_{CB}=60V, I_E=0, T_a=150ºC			100	µA
Emitter Cut Off Current	I_{EBO}	V_{EB}=5V, I_C=0			100	nA
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=150mA, I_B=15mA			0.9	V
Base Emitter Saturation Voltage	*$V_{BE\ (sat)}$	I_C=150mA, I_B=15mA			1.2	V
DC Current Gain	*h_{FE}	I_C=1mA, V_{CE}=10V	30			
		I_C=150mA, V_{CE}=10V	50		200	

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

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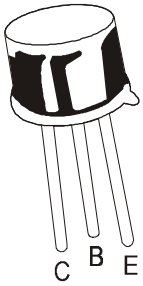

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Metal Can Package

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

SMALL SIGNAL CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	h_{fe}	I_C=5mA, V_{CE}=10V, f=1KHz	50		275	
Transition Frequency	f_T	I_C=50mA, V_{CE}=10V, f=20MHz	100			MHz
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=100KHz			15	pF
Input Capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=100KHz			80	pF
Noise Figure	NF	I_C=300µA, V_{CE}=10V, f=1KHz,Bandwidth=1.0 Hz R_S=1kΩ			10	dB

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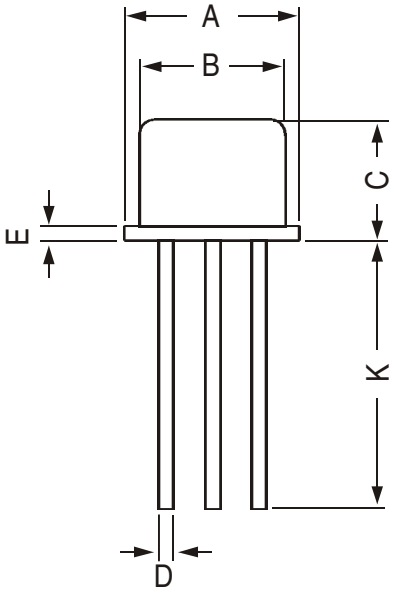
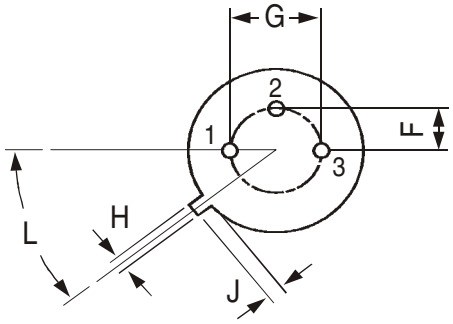
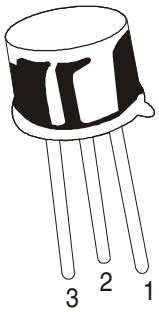


All dimensions are in mm

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

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