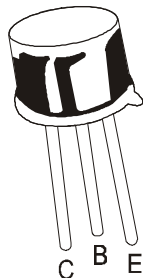


NPN SILICON PLANAR TRANSISTOR

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 @ $T_a=25^\circ\text{C}$ Derate Above 25°C	P_D	1.0 5.71	W mW/ $^\circ\text{C}$
Power Dissipation @ $T_c=25^\circ\text{C}$ Derate Above 25°C	P_D	5.0 28.6	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200	$^\circ\text{C}$

THERMAL RESISTANCE

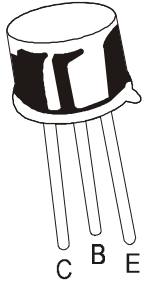
Junction to Ambient in free air	$R_{th(j-a)}$	175	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	35	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

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

*Pulse Test: Pulse Width $\leq 300\text{ms}$, Duty Cycle $\leq 2\%$

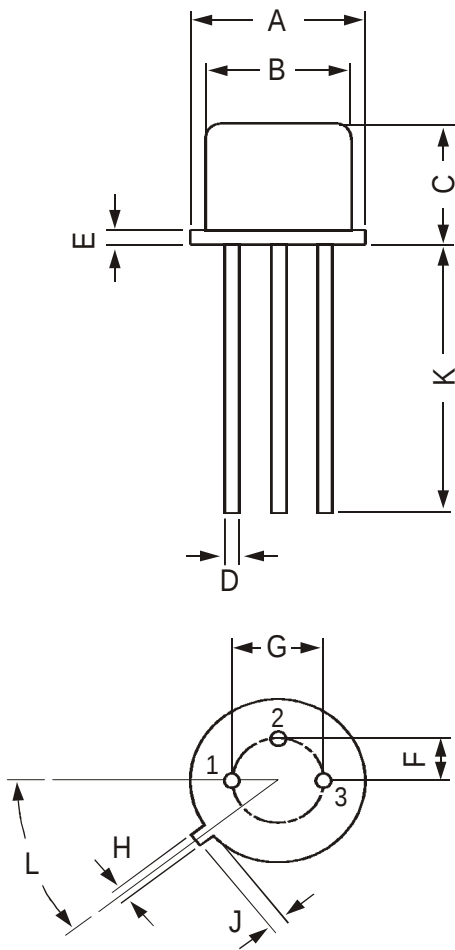
2N2270Rev_1 040904E

NPN SILICON PLANAR TRANSISTOR**2N2270**
TO-39
Metal Can Package
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)**SMALL SIGNAL CHARACTERISTICS**

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

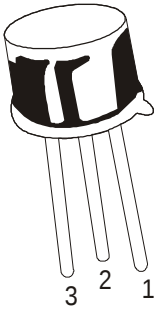
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TO-39 Metal Can Package



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

Disclaimer

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