



THE DATASHEET OF 2N3110



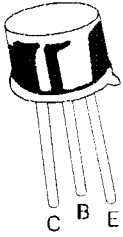
SOLID STATE INC.

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NPN SILICON POWER SWITCHING TRANSISTOR

2N3110



TO-39
Metal Can Package

For AF Medium Power Drivers and Outputs, as well as for Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	V_{CBO}	80	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	7	V
Collector Current	I_C	1	A
Power Dissipation @ $T_c \leq 25^\circ\text{C}$	P_D	5	W
Power Dissipation @ $T_a \leq 25^\circ\text{C}$	P_D	800	mW
Operating and Storage Junction Temperature Range	T_J, T_{slg}	- 65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Junction to Ambient in free air	$R_{th(j-a)}$	219	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	35	$^\circ\text{C/W}$

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

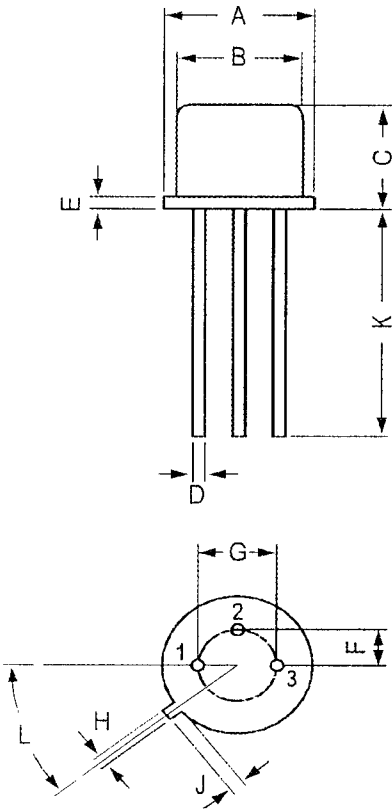
DESCRIPTION	SYMBOL	TEST CONDITION	MIN		MAX	UNITS
Collector Base Voltage	V_{CBO}	$I_C = 0.1\text{mA}, I_E = 0$	80			V
Collector Emitter Voltage	$*V_{CEO}$	$I_C = 30\text{mA}, I_B = 0$	40			V
Emitter Base Voltage	V_{EBO}	$I_E = 0.1\text{mA}, I_C = 0$	7			V
Collector Cut off Current	I_{CES}	$V_{CE} = 60\text{V}, V_{BE} = 0$			10	nA
Collector Cut off Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0, T_a = 150^\circ\text{C}$			10	μA
Emitter Cut off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			10	nA
Collector Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 1\text{A}, I_B = 0.1\text{A}$			0.25 1.0	V V
Base Emitter Saturation Voltage	$*V_{BE(sat)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 1\text{A}, I_B = 0.1\text{A}$			1.1 2.0	V V
DC Current Gain	$*h_{FE}$	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 150\text{mA}, V_{CE} = 1\text{V}$ $I_C = 500\text{mA}, V_{CE} = 10\text{V}$ $I_C = 150\text{mA}, V_{CE} = 10\text{V}, T_a = -55^\circ\text{C}$	20 40 25 15		120	
Transition Frequency	f_T	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$	60			MHz
Collector Base Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			25	pF
Emitter Base Capacitance	C_{ib}	$V_{EB} = 0.5\text{V}, I_C = 0, f = 1\text{MHz}$			80	pF
Noise Figure	NF	$I_C = 30\mu\text{A}, V_{CE} = 10\text{V}, R_g = 1\text{K}\Omega$			7.0	dB
Turn on time	t_{on}	$I_C = 150\text{mA}, I_{B1} = 7.5\text{mA}$			200	ns
Turn off time	t_{off}	$I_C = 150\text{mA}, I_{B1} = -I_{B2} = 7.5\text{mA}$			600	ns

Pulse Width=300 μs , Duty Cycle=1%

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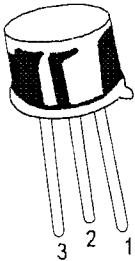
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Metal Can Package

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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

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