



Features

- NPN Silicon Planar Switching Transistor
- Switching and Linear application DC and VHF Amplifier applications

**RoHS
Compliant**

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Values	Unit
Collector Emitter Voltage	V_{CEO}	30	V
Collector Base Voltage	V_{CBO}	60	
Emitter Base Voltage	V_{EBO}	5	
Collector Current Continuous	I_C	800	mA
Power Dissipation at $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	500 2.28	mW mW / $^\circ\text{C}$
Power Dissipation at $T_c = 25^\circ\text{C}$ Derate above 25°C	P_D	1.2 6.85	W mW / $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

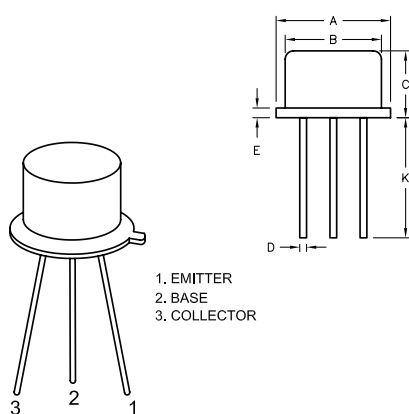
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Value		
			Minimum	Maximum	Unit
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C = 10\text{mA}, I_B = 0$	30	-	V
Collector Base Breakdown Voltage	BV_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	60	-	
Emitter Base Breakdown Voltage	V_{EBOF}	$I_E = 10\mu\text{A}, I_C = 0$	5	-	
Collector Leakage Current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$ $V_{CB} = 50\text{V}, I_E = 0$ $T_A = 150^\circ\text{C}$	-	10 10	nA μA
Collector Emitter Saturation Voltage	$*V_{CE(SAT)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	-	0.4 1.6	V
Base Emitter Saturation Voltage	$*V_{BE(SAT)}$	$I_C = 150\text{mA}, I_B = 15\text{mA}$ $I_C = 500\text{mA}, I_B = 50\text{mA}$	0.6	1.3 2.6	
DC Current Gain	h_{FE}	$I_C = 0.1\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 1\text{mA}, V_{CE} = 10\text{V}$ $I_C = 10\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 150\text{mA}, V_{CE} = 1\text{V}^*$ $I_C = 150\text{mA}, V_{CE} = 1\text{V}^*$ $I_C = 500\text{mA}, V_{CE} = 10\text{V}^*$	35 50 75 50 100 30	300	-
Dynamic Characteristics					
Transition Frequency	f_t	$I_C = 20\text{mA}, V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	250	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0$ $f = 100\text{kHz}$	-	8	pF
Input Capacitance	C_{ib}	$V_{EB} = 0.5\text{V}, I_C = 0$ $f = 100\text{kHz}$	-	30	

Parameter	Symbol	Test Condition	Value		
			Minimum	Maximum	Unit
Switching Characteristics					
Delay Time	td	Ic = 150mA, IB1 = 15mA	-	10	ns
Rise Time	tr	VCC = 30V, VBE (off) = 0.5V	-	25	
Storage Time	ts	Ic = 150mA, IB1 = 15mA	-	225	
Fall Time	tf	IB2 = 15mA, VCC = 30V	-	60	

*Pulse Condition: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

TO-18 Metal Can Package



Dimensions	Minimum	Maximum
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.4	0.53
E	-	0.76
F	-	1.27
G	-	2.97
H	0.91	1.17
J	0.71	1.21
K	12.7	-
L	45°	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, TO - 18	2N2222

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