THE DATASHEET OF

2N3054

ELECTRONICS, INC.
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2N3054
Silicon NPN Transistors
Medium Power General Purpose Switch
TO66 Type Package

Description:

The 2N3054 is a silicon NPN transistor in a TO66 type package designed for general purpose switching and amplifier applications

Features:

- Excellent Safe Operating Area
- DC Current Gain Specified to 3.0 Amps

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 55V
Collector–Emitter Voltage (R_{BE} = 100°), V_{CER} 60V
Collector–Base Voltage, V_{CB} 90V
Emitter–Base Voltage, V_{EB} 7V
Collector Current, I_C
Continuous 4A
Peak 10A
Base Current, I_B 2A
Total Power Dissipation (T_C = +25°C), P_D 25W
Derate above 25°C . . . . . 0.143W/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Junction Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction to Case, $R_{\leq JC}$ . . . . . 7°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

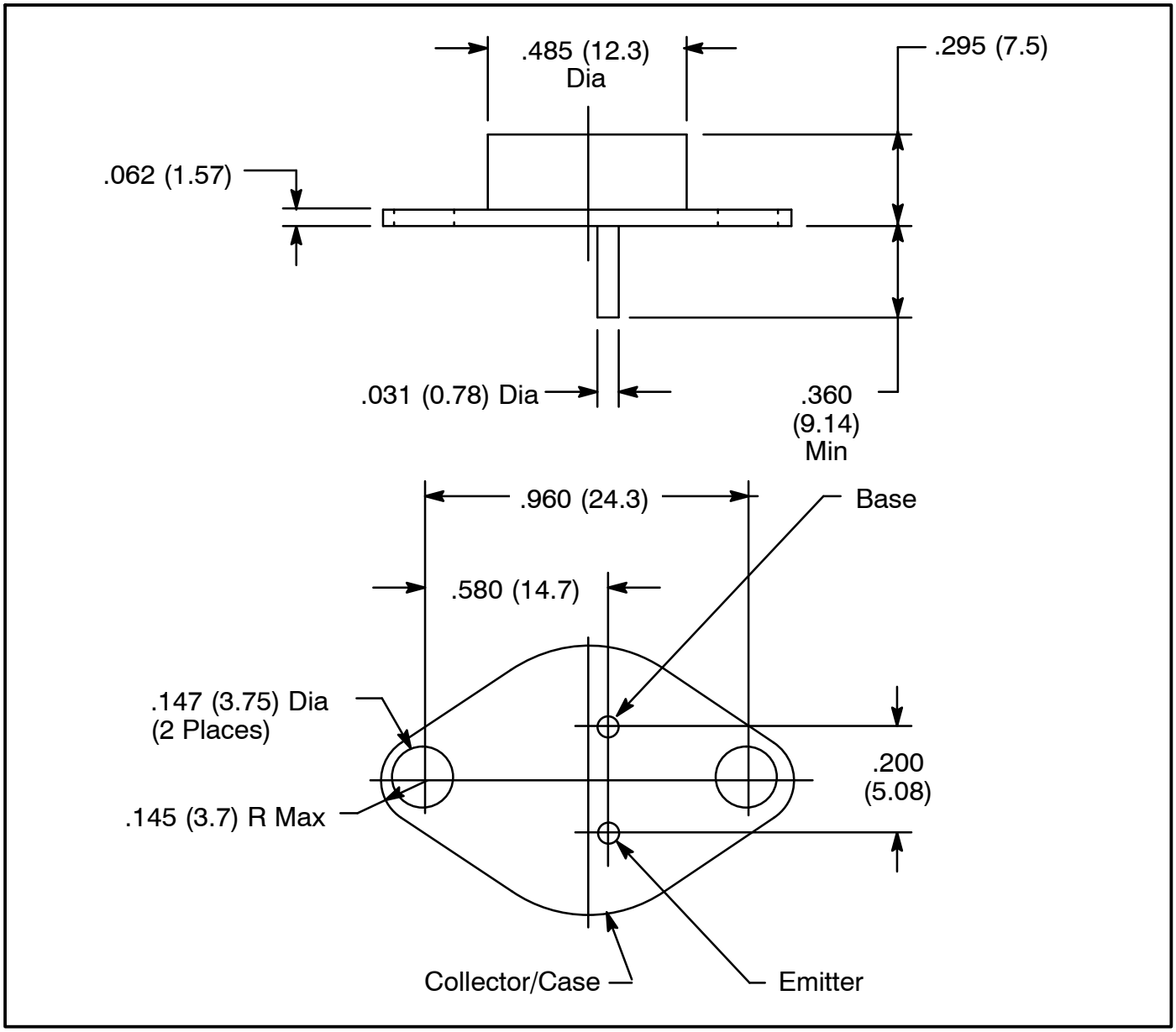
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 100mA, I_B = 0, Note 1	55	–	–	V
	$V_{CER(sus)}$	I_C = 100mA, R_{BE} = 100° , Note 1	60	–	–	V
Collector Cutoff Current	I_{CEO}	V_{CE} = 30V, I_B = 0	–	–	5	A
	I_{CEX}	V_{CE} = 90V, $V_{BE(off)}$ = 1.5V	–	–	1.0	mA
		V_{CE} = 90V, $V_{BE(off)}$ = 1.5V, T_C = +150°C	–	–	6.0	mA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 7V, I_C = 0	–	–	1.0	mA

Note 1. Pulse Test: Pulse Width ≤ 300 s, Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 0.5A, V_{CE} = 4V	25	–	150	
		I_C = 3.0A, V_{CE} = 4V	5.0	–	–	
Collector−Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	–	–	1.0	V
		I_C = 3.0A, I_B = 1.0A	–	–	6.0	V
Base−Emitter ON Voltage	$V_{BE(on)}$	I_C = 500mA, V_{CE} = 4V	–	–	1.7	V
Dynamic Characteristics						
Current Gain −Bandwidth Product	f_T	I_C = 200mA, V_{CE} = 10V	3.0	–	–	MHz
Small−Signal Current Gain	h_{fe}	I_C = 100mA, V_{CE} = 4V, f = 1kHz	25	–	180	
Common−Emitter Cutoff frequency	f_{hfe}	I_C = 100mA, V_{CE} = 4V	30	–	–	

Note 1. Pulse Test: Pulse Width ≤ 300 s, Duty Cycle ≤ 2%.



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