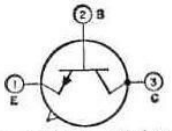
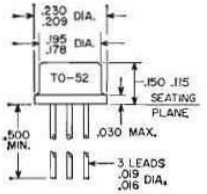
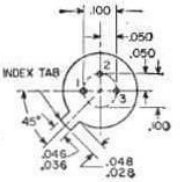
TRANSISTOR

2N2938



Silicon n-p-n type used in switching applications in military and commercial data-processing equipment. This type features high beta and high switching speed at high values of collector current, as well as low base and collector cutoff currents, low saturation voltages at high values of collector current, and exceptional stability of characteristics. JEDEC No. TO-52 package; outline 20, Outlines Section.





MAXIMUM RATINGS

Collector-to-Base Voltage	25 max	volts
Collector-to-Emitter Voltage	13 max	volts
Emitter-to-Base Voltage	5 max	volts
Collector Current	500 max	ma
Transistor Dissipation:		
At case temperatures up to 25°C	1 max	watt
At ambient temperatures up to 25°C	0.3 max	watt
At case or ambient temperatures above 25°C	See curve page 80	
Temperature Range:		
Operating	−65 to 175	°C
Storage	−65 to 200	°C
Lead Temperature (for 10 seconds maximum)	300 max	°C

CHARACTERISTICS

Collector-to-Emitter Saturation Voltage (with collector ma = 50 and base ma = 1.6)	0.4 max	volt
Base-to-Emitter Saturation Voltage (with collector ma = 50 and base ma = 1.6)	0.8 to 0.95	volt
Collector-Cutoff Current:		
With ambient temperature = 25°C, collector-to-emitter volts = 20, and emitter-to-base volts = 0	25 max	μa
With ambient temperature = 150°C, collector-to-emitter volts = 20, and emitter-to-base volts = 0	25 max	μa
In Common-Base Circuit		
Emitter-to-Base Capacitance (with emitter-to-base volts = 1 and base current = 0)	5 max	pf
Collector-to-Base Capacitance (with collector-to-base volts = 5 and emitter current = 0)	4 max	pf
In Common-Emitter Circuit		
DC Forward Current-Transfer Ratio:		
With collector-to-emitter volt = 0.35 and collector ma = 10	125	
With collector-to-emitter volt = 0.4 and pulsed collector ma = 50*	105	
With collector-to-emitter volt = 1 and pulsed collector ma = 200*	60	
With collector-to-emitter volt = 0.4, pulsed collector ma = 50*, and ambient temperature = −55°C	65	
Small-Signal Forward Current-Transfer Ratio (with collector-to-emitter volts = 10, collector ma = 10, and frequency = 100 Mc)	6.9	

* Pulse duration = 50 μsec; duty factor = 0.02 or less.