ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

2N3583, 2N3584, 2N3585
Silicon NPN Transistors
High Voltage, Medium Power Switch
TO66 Type Package

Description:

The 2N3583, 2N3584, and 2N3585 are silicon transistors in a TO66 type package designed for high–speed switching and linear amplifier applications for high–voltage operational amplifiers, switching regulators, converters, inverters, deflection stages, and high fidelity amplifiers.

Features:

- TO66 Type Package
- Continuous Collector Current: I_C = 2A
- Power Dissipation: P_D = 35W @ T_C = +25°C
- Collector–Emitter Saturation Voltage: $V_{CE(sat)}$ = 0.75V (Max) @ I_C = 1A, I_B = 125mA

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}
- 2N3583 . . . . . 175V
- 2N3584 . . . . . 250V
- 2N3585 . . . . . 300V

Collector–Base Voltage, V_{CB}
- 2N3583 . . . . . 250V
- 2N3584 . . . . . 375V
- 2N3585 . . . . . 500V

Emitter–Base Voltage, V_{EB} 6V

Collector Current, I_C
- Continuous
  - 2N3583 . . . . . 1A
  - 2N3584, 2N3585 . . . . . 2A
- Peak 5A

Base Current, I_B 1A

Total Power Dissipation (T_C = +25°C), P_D 35W
- Derate above 25°C . . . . . 0.2W/°C

Operating Junction Temperature Range, T_J . . . . . –65° to +200°C

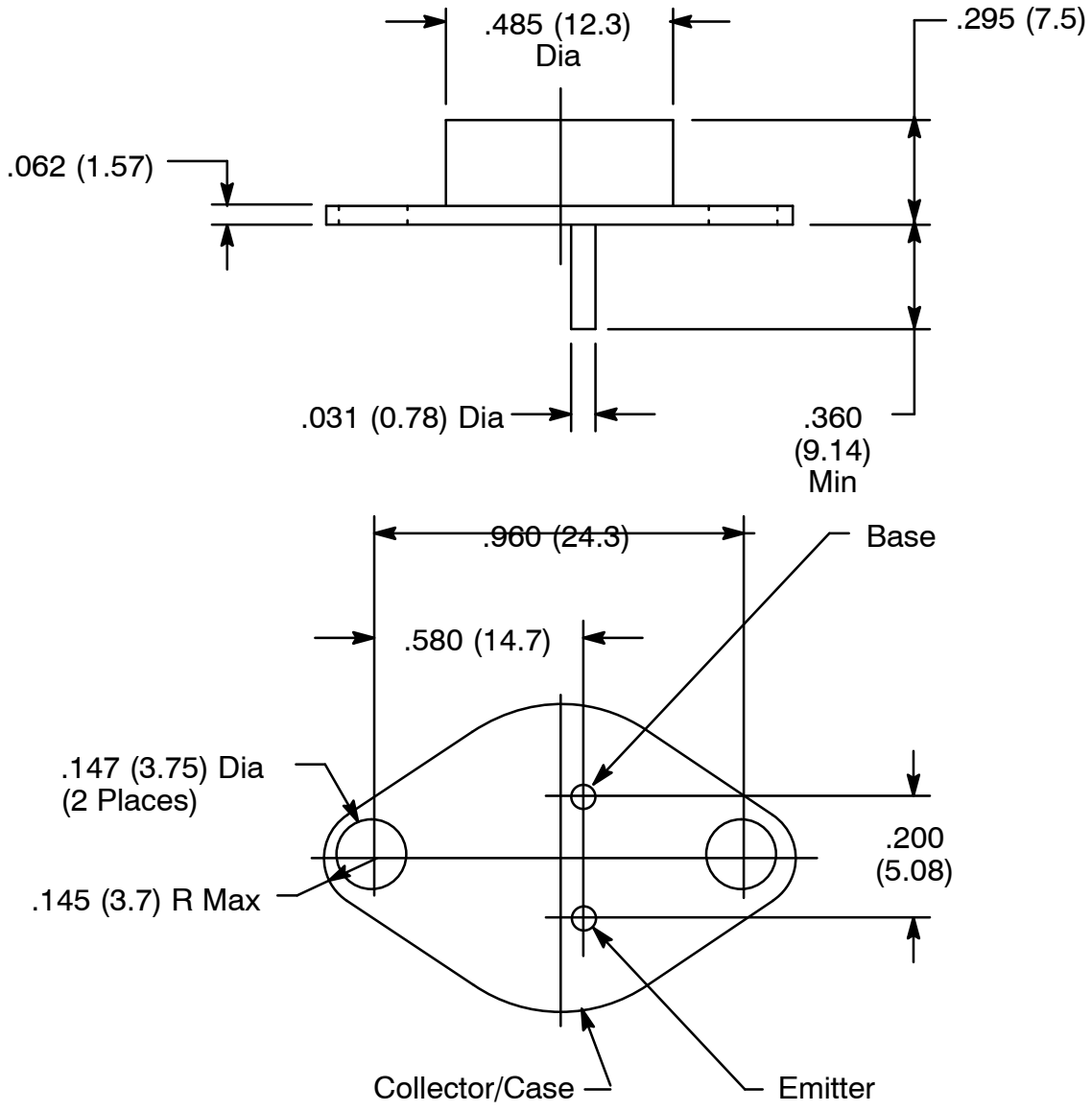
Storage Junction Temperature Range, T_{stg} . . . . . –65° to +200°C

Thermal Resistance, Junction to Case, $R_{\Theta JC}$ . . . . . 5°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 2N3583	$V_{CEO(sus)}$	I_C = 200mA, I_B = 0, Note 1	175	–	–	V
2N3584			250	–	–	V
2N3585			300	–	–	V
Collector Cutoff Current 2N3583	I_{CEO}	V_{CE} = 150V, I_B = 0	–	–	10	mA
2N3584, 2N3585			–	–	5	mA
Collector Cutoff Current 2N3583	I_{CEX}	V_{CE} = 225V, $V_{BE(off)}$ = 1.5V	–	–	1	mA
		V_{CE} = 225V, $V_{BE(off)}$ = 1.5V, T_C = +150°C	–	–	3	mA
2N3584		V_{CE} = 340V, $V_{BE(off)}$ = 1.5V	–	–	1	mA
		V_{CE} = 300V, $V_{BE(off)}$ = 1.5V, T_C = +100°C	–	–	3	mA
2N3585		V_{CE} = 450V, $V_{BE(off)}$ = 1.5V	–	–	1	mA
		V_{CE} = 300V, $V_{BE(off)}$ = 1.5V, T_C = +100°C	–	–	3	mA
Emitter Cutoff Current 2N3583	I_{EBO}	V_{EB} = 6V, I_C = 0	–	–	5	mA
2N3584, 2N3585			–	–	0.5	mA
ON Characteristics (Note 1)						
DC Current Gain All Devices	h_{FE}	I_C = 100mA, V_{CE} = 10V	40	–	–	
2N3583		I_C = 500mA, V_{CE} = 10V	40	–	200	
		I_C = 1A, V_{CE} = 10V	10	–	–	
2N3584, 2N3585		I_C = 1A, V_{CE} = 2V	8	–	80	
		I_C = 1A, V_{CE} = 10V	25	–	100	
Collector−Emitter Saturation Voltage 2N3583	$V_{CE(sat)}$	I_C = 1A, I_B = 125mA	–	–	5.0	V
2N3584, 2N3585			–	–	0.75	V
Base−Emitter Saturation Voltage 2N3584 & 2N3585 **Only**	$V_{BE(sat)}$	I_C = 1A, I_B = 100mA	–	–	1.4	V
Base−Emitter ON Voltage	$V_{BE(on)}$	I_C = 1A, V_{CE} = 10V	–	–	1.4	V

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


.485 (12.3)
Dia
.295 (7.5)
.062 (1.57)
.031 (0.78) Dia
.360
(9.14)
Min
.960 (24.3)
Base
.580 (14.7)
.147 (3.75) Dia
(2 Places)
.200
(5.08)
.145 (3.7) R Max
Collector/Case
Emitter