



NPN 2N3583 – 2N3584 – 2N3585

NPN SILICON POWER TRANSISTORS.

The 2N3583 2N3584 2N3585 are mounted in Jedec TO-66 metal case. They are designed for high-speed switching and linear amplifier application for high-voltage operational amplifiers, switching regulators, converters, deflection stages and high fidelity amplifiers. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		2N3583	250	V
			2N3584	330	
			2N3585	440	
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		2N3583	175	V
			2N3584	250	
			2N3585	300	
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		6	V	
I_C	Collector Current		2N3583	1	A
			2N3584	2	
			2N3585	2	
I_{CM}	Peak Collector Current	$t_p = 10ms$	5	A	
I_B	Base current		1	A	
P_T	Total power Dissipation	@ $T_{mb} = 70^\circ C$	35	W	
T_J	Junction Temperature		200	$^\circ C$	
T_{Stg}	Storage Temperature		-65 to +200	$^\circ C$	

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJC}	Thermal Resistance, Junction to Case		5	$^\circ C/W$
R_{thJA}	Thermal Resistance, Junction to ambient in free air		87.5	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
I_{CEO}	Collector-Emitter cut-off current	$I_B = 0$; $V_{CE} = 150$ V	2N3583	-	-	10	
			2N3584	-	-	5	
			2N3585	-	-	5	
I_{CEX}	Collector-Emitter cut-off current	$V_{BE} = -1.5$ V ; $V_{CE} = 225$ V	2N3583			1	mA
		$V_{BE} = -1.5$ V ; $V_{CE} = 340$ V	2N3584				
		$V_{BE} = -1.5$ V ; $V_{CE} = 450$ V	2N3585				
		$V_{BE} = -1.5$ V ; $V_{CE} = 225$ V $T_j = 150^\circ\text{C}$	2N3583	-	-	3	
		$V_{BE} = -1.5$ V ; $V_{CE} = 300$ V $T_j = 150^\circ\text{C}$	2N3584				
2N3585							
I_{EBO}	Emitter cut-off current	$I_C = 0$; $V_{EB} = 6$ V	2N3583	-	-	5	
			2N3584	-	-	0.5	
			2N3585	-	-	0.5	
$V_{CEO(SUS)}$	Collector-Emitter sustaining Voltage (*)	$I_B = 0$; $I_C = 200$ mA	2N3583	175	-	-	V
			2N3584	250	-	-	
			2N3585	300	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 1$ A ; $I_B = 125$ mA	2N3583	-	-	5	V
			2N3584	-	-	0.75	
			2N3585	-	-	0.75	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	$I_C = 1$ A ; $I_B = 100$ mA	2N3583			1.4	
			2N3584	-	-		
			2N3585	-	-		
h_{FE}	DC Current Gain (*)	$V_{CE} = 10$ V ; $I_C = 500$ mA	2N3583	40	-	200	
			2N3583	10	-	-	
		$V_{CE} = 10$ V ; $I_C = 1$ A	2N3584	25	-	100	
			2N3585	25	-	100	
		$V_{CE} = 2$ V ; $I_C = 1$ A	2N3584	8	-	80	
2N3585	8		-	80			
$I_{S/B}$	Second Breakdown Collector current	$V_{CE} = 100$ V ; $t = 1$ s	2N3583	350	-	-	mA
			2N3584				
			2N3585				
f_T	Transition frequency	$V_{CE} = 10$ V ; $I_C = 200$ mA $f = 5$ MHz	2N3583	10	-	-	MHz
			2N3584				
			2N3585				
$t_d + t_r$	Turn-on-time	$I_C = 1$ A ; $I_B = 100$ mA	2N3584	-	-	3	
			2N3585				
t_f	Fall time	$I_C = 1$ A ; $I_B = 100$ mA	2N3584	-	-	3	μs
			2N3585				
t_s	Carrier storage time	$I_C = 1$ A ; $I_B = 100$ mA	2N3584	-	-	4	
			2N3585				

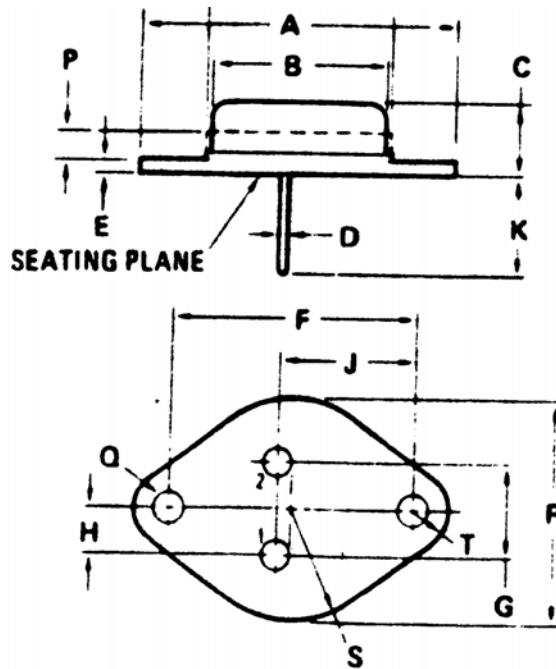
(*) Measured under pulse conditions : $t_P < 300\mu\text{s}$, $\delta < 2\%$.

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MECHANICAL DATA CASE TO-66

DIMENSIONS		
	mm	
	min	max
A	30.60	32.52
B	11.94	12.7
C	6.35	8.63
D	0.712	0.863
E	1.27	1.91
F	24.28	24.50
G	4.83	5.33
H	2.41	2.67
J	14.48	14.99
K	9.15	10.50
P	-	2.7
Q	3.60	4.00
S	-	8.89
T	-	3.68

Pin 1 :	Emitter
Pin 2 :	Base
Case :	Collector



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