



## 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	

## NPN 2N3583 – 2N3584 – 2N3585

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

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

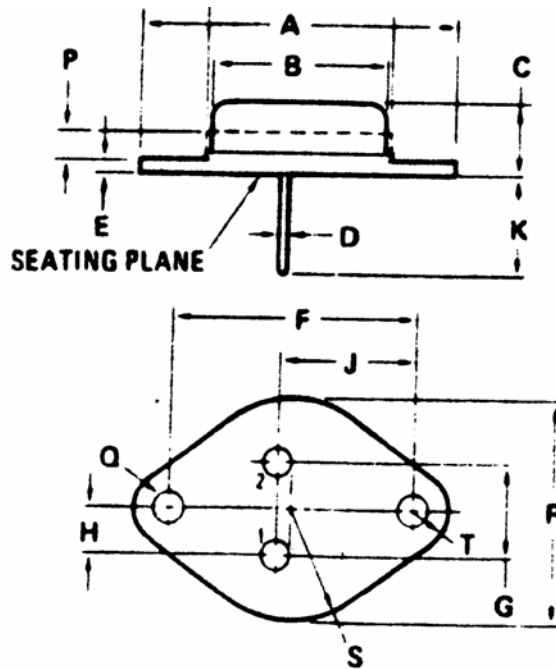
(\*) Measured under pulse conditions :  $t_P < 300 \mu\text{s}$ ,  $\delta < 2\%$ .

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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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