



NPN 2N3583 – 2N3584 – 2N3585

NPN SILICON POWER TRANSISTORS.

High voltage power transistors designed for industrial and military applications.
TO-66 metal case.

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

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

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

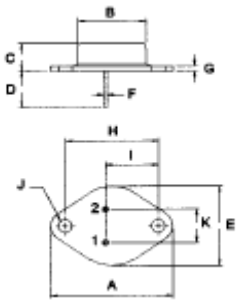
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	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 (1)	$I_B = 0 ; I_C = 200 \text{ mA}$	2N3583	175	-	-	V
			2N3584	250	-	-	
			2N3585	300	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	$I_C = 1 \text{ A} ; I_B = 125 \text{ mA}$	2N3583	-	-	5	V
			2N3584	-	-	0.75	
			2N3585	-	-	0.75	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (1)	$I_C = 1 \text{ A} ; I_B = 100 \text{ mA}$	2N3583			1.4	
			2N3584	-	-		
			2N3585				
h_{FE}	DC Current Gain (1)	$V_{CE} = 10 \text{ V} ; I_C = 500 \text{ mA}$	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	μs
			2N3585				
t_s	Carrier storage time	$I_C = 1 \text{ A} ; I_B = 100 \text{ mA}$	2N3584	-	-	4	
			2N3585				

1. Measured under pulse conditions : $t_p < 300 \mu\text{s}$, $\delta < 2\%$.

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MECHANICAL DATA CASE TO-66



DIM	MILLIMETERS	
	MIN	MAX
A	30.60	32.52
B	13.85	14.16
C	6.54	7.22
D	9.50	10.50
E	17.26	18.46
F	0.76	0.92
G	1.38	1.65
H	24.16	24.78
I	13.84	15.60
J	3.32	3.92
K	4.86	5.34

Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector