

2N6253 - 2N6254 - 2N6371

HIGH POWER SILICON NPN TRANSISTORS

The 2N6253, 2N6254, and 2N6371 are silicon NPN transistors intended for a wide variety of high-power applications. The construction of these devices renders them highly resistant to second breakdown over a wide range of operating conditions.

These devices differ in maximum ratings for voltage and power dissipation. All are supplied in JEDEC TO-3 hermetic steel packages.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Voltage	2N6253	45	V
		2N6254	80	
		2N6371	40	
V_{CBO}	Collector-Base Voltage (*)	2N6253	55	V
		2N6254	100	
		2N6371	50	
$V_{CER(SUS)}$	Collector-Emitter Voltage $R_{BE}=100\Omega$	2N6253	55	V
		2N6254	85	
		2N6371	45	
$V_{CEV(SUS)}$	Collector-Emitter Voltage $V_{BE}=-1.5V$	2N6253	55	V
		2N6254	90	
		2N6371	50	
V_{EBO}	Emitter-Base Voltage	2N6253	5	V
		2N6254	7	
		2N6371	5	
I_C	Collector Current	2N6253	15	A
		2N6254		
		2N6371		
I_B	Base Current	2N6253	7	A
		2N6254		
		2N6371		

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Symbol	Ratings		Value	Unit	
P_{TOT}	Power Dissipation	< 25°C	2N6253	115	Watts
			2N6254	150	
			2N6371	117	
		> 25°C	2N6253 2N6254 2N6371	Derate Linearly to 200°C	
T_J	Junction Temperature		2N6253 2N6254 2N6371	-65 to +200	°C
T_S	Storage Temperature				

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	2N6253	1.5	°C/W
		2N6254	1.17	
		2N6371	1.5	

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
$V_{CE(SAT)}$	Collector-Emitter Voltage (*)	$I_C=3\text{ A}, I_B=0.3$	-	-	1	V
		$I_C=15\text{ A}, I_B=5$	-	-	4	
		$I_C=5\text{ A}, I_B=0.5$	-	-	0.5	
		$I_C=15\text{ A}, I_B=3$	-	-	4	
		$I_C=8\text{ A}, I_B=0.8$	-	-	1.5	
		$I_C=16\text{ A}, I_B=4$	-	-	4	
I_{CEO}	Collector-Emitter Cutoff Current	$V_{CE}=25\text{ V}$	-	-	1.5	mA
		$V_{CE}=60\text{ V}$	-	-	1.0	
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB}=-5\text{ V}$	-	-	10	mA
		$V_{EB}=-7\text{ V}$	-	-	0.5	

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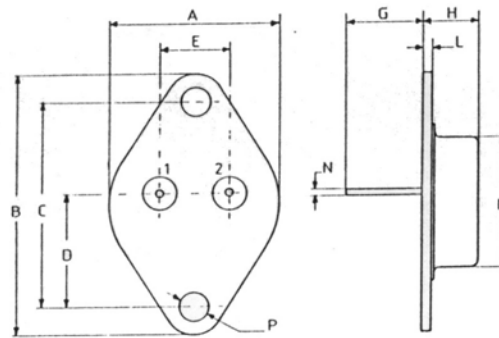
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CEX}	Collector Cutoff Current	$T_C=150^\circ\text{C}$ $V_{CE}=40\text{ V}$ $V_{BE}=-1.5\text{ V}$	2N6371	-	-	10	mA
			2N6253	-	-	10	
			2N6254	-	-	5.0	
		$T_C=25^\circ\text{C}$ $V_{CE}=45\text{ V}$ $V_{BE}=-1.5\text{ V}$	2N6371	-	-	2.0	
			2N6253	-	-	2.0	
			2N6254	-	-	0.5	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C=0.2\text{ A}, I_B=0\text{ A}$	2N6253	45	-	-	V
			2N6254	80	-	-	
			2N6371	40	-	-	
$V_{CER(SUS)}$	Collector-Emitter Sustaining Voltage (*) $R_{BE}=100\Omega$	$I_C=0.2\text{ mA}$	2N6253	55	-	-	V
			2N6254	85	-	-	
			2N6371	45	-	-	
$V_{CEV(SUS)}$	Base-Emitter Voltage (*)	$I_C=0.1\text{ A}, V_{BE}=-1.5\text{ V}$	2N6253	55	-	-	V
			2N6254	90	-	-	
			2N6371	50	-	-	
V_{BE}	Base-Emitter Voltage (*)	$V_{CE}=4\text{ V}, I_C=3\text{ A}$	2N6253	-	-	1.7	V
		$V_{CE}=2\text{ V}, I_C=5\text{ A}$	2N6254	-	-	1.5	
		$V_{CE}=4\text{ V}, I_C=16\text{ A}$	2N6371	-	-	4	
h_{FE}	Static Forward Current transfer ratio (*)	$V_{CE}=4\text{ V}, I_C=3\text{ A}$	2N6253	20	-	70	-
		$V_{CE}=4\text{ V}, I_C=15\text{ A}$		3	-	-	
		$V_{CE}=2\text{ V}, I_C=5\text{ A}$	2N6254	20	-	70	
		$V_{CE}=4\text{ V}, I_C=15\text{ A}$		5	-	-	
h_{fe}	Small Signal Current Gain	$V_{CE}=4\text{ V}, I_C=1\text{ A}, f=1\text{ kHz}$	2N6253	10	-	-	-
			2N6254 2N6371				
f_T	Transition Frequency	$V_{CE}=4\text{ V}, I_C=1\text{ A}$	2N6253	-	-	-	kHz
			2N6254	-	-	-	
			2N6371	800	-	-	
$I_{S/b}$	Second Breakdown Collector Current $t_p=1\text{ s}, \text{ non rep.}$	$V_{CE}=45\text{ V}$	2N6253	2.55	-	-	A
			2N6254	1.87	-	-	
			2N6371	2.9	-	-	

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

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MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,45	1
B	38,8	1,52
C	30,09	1,184
D	17,11	0,67
E	9,78	0,38
G	11,09	0,43
H	8,33	0,32
L	1,62	0,06
M	19,43	0,76
N	1	0,04
P	4,08	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector

*Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.
Data are subject to change without notice*