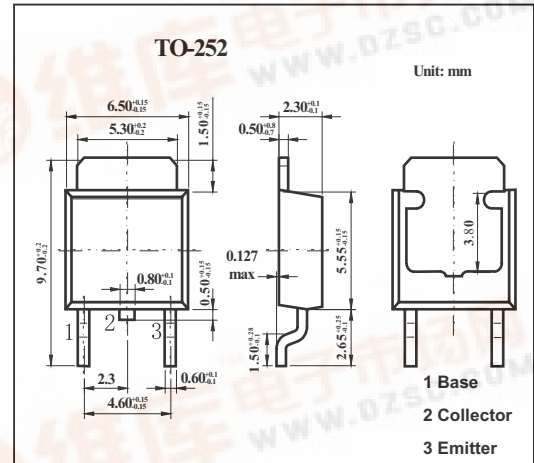


SMD Type Transistors

Silicon NPN Triple Diffusion Planar Type  
2SD1253, 2SD1253A

■ Features

- High forward current transfer ratio  $h_{FE}$  which has satisfactory linearity.
- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Collector-base voltage	$V_{CBO}$	2SD1253	60	V
		2SD1253A	80	V
Collector-emitter voltage	$V_{CEO}$	2SD1253	60	V
		2SD1253A	80	V
Emitter-base voltage	$V_{EBO}$	5	V	
Collector current	$I_C$	4	A	
Peak collector current	$I_{CP}$	8	A	
Collector power dissipation	$P_C$	$T_a = 25^\circ\text{C}$	1.3	W
		$T_c = 25^\circ\text{C}$	40	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	

## 2SD1253,2SD1253A

## ■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter voltage	2SD1253	V <sub>CEO</sub>	I <sub>C</sub> = 30 mA, I <sub>B</sub> = 0	60			V
	2SD1253A			80			V
Base-emitter voltage		V <sub>BE</sub>	V <sub>CE</sub> = 4 V, I <sub>C</sub> = 3 A			2	V
Collector-emitter cutoff current	2SD1253	I <sub>CES</sub>	V <sub>CE</sub> = 60 V, V <sub>BE</sub> = 0			400	μA
	2SD1253A					400	μA
Collector-emitter cutoff current	2SD1253	I <sub>CEO</sub>	V <sub>CE</sub> = 30 V, I <sub>B</sub> = 0			700	μA
	2SD1253A					700	μA
Emitter-base cutoff current		I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0			1	mA
Forward current transfer ratio		h <sub>FE</sub>	V <sub>CE</sub> = 4 V, I <sub>C</sub> = 1 A	40		250	
Forward current transfer ratio			V <sub>CE</sub> = 4 V, I <sub>C</sub> = 3 A	15			
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = 4 A, I <sub>B</sub> = 0.4 A			1.5	V
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.5 A, f = 1 MHz		20		MHz
Turn-on time		t <sub>on</sub>	I <sub>C</sub> =4A		0.4		μs
Storage time		t <sub>stg</sub>	I <sub>B1</sub> =-I <sub>B2</sub> =0.4 A		1.2		μs
Fall time		t <sub>f</sub>	V <sub>CC</sub> =50V		0.5		μs

## ■ hFE Classification

Rank	R	Q	P
hFE	40~90	70~150	120~250