

2SD1253, 2SD1253A

Silicon NPN triple diffusion planar type

For power amplification

Complementary to 2SB0930, 2SB0930A

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

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

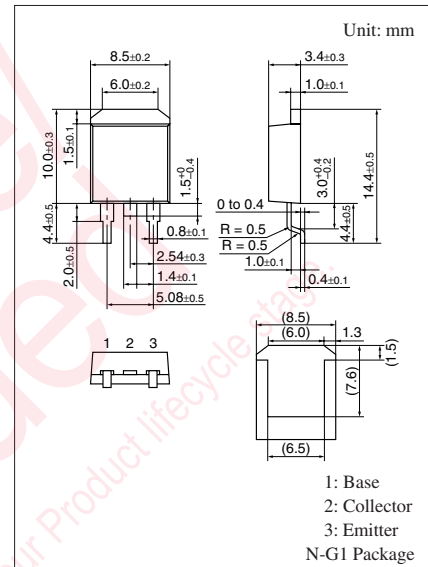
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1253	$I_C = 30\text{ mA}, I_B = 0$	60			V
	2SD1253A		80			
Collector-emitter cutoff current (E-B short)	2SD1253	$V_{CE} = 60\text{ V}, V_{BE} = 0$			400	μA
	2SD1253A	$V_{CE} = 80\text{ V}, V_{BE} = 0$			400	
Collector-emitter cutoff current (Base open)	2SD1253	$V_{CE} = 30\text{ V}, I_B = 0$			700	μA
	2SD1253A	$V_{CE} = 60\text{ V}, I_B = 0$			700	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			1	mA
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = 4\text{ V}, I_C = 1\text{ A}$	40		250	—
	h_{FE2}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	15			
Base-emitter voltage	V_{BE}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$			2.0	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 0.4\text{ A}$			1.5	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}, f = 1\text{ MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = 4\text{ A}$		0.4		μs
Storage time	t_{stg}	$I_{B1} = 0.4\text{ A}, I_{B2} = -0.4\text{ A}$		1.2		μs
Fall time	t_f	$V_{CC} = 50\text{ V}$		0.5		μs

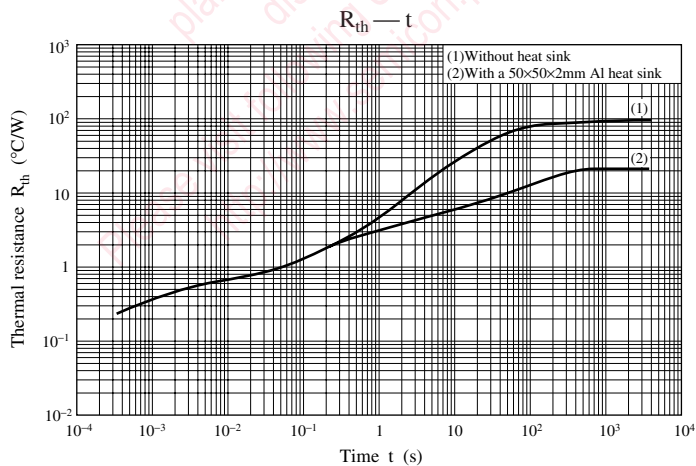
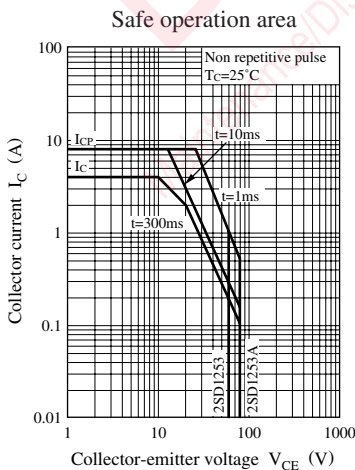
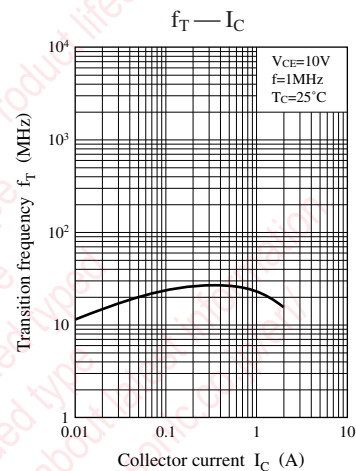
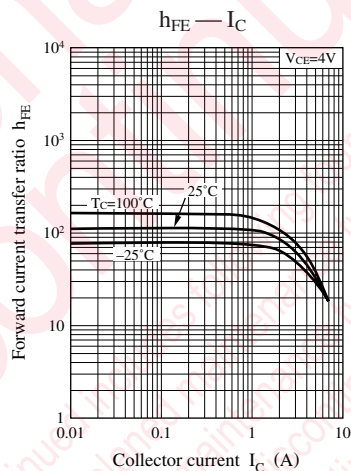
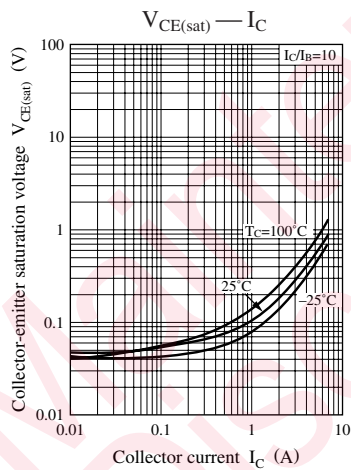
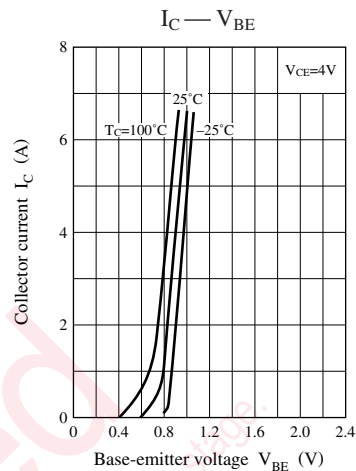
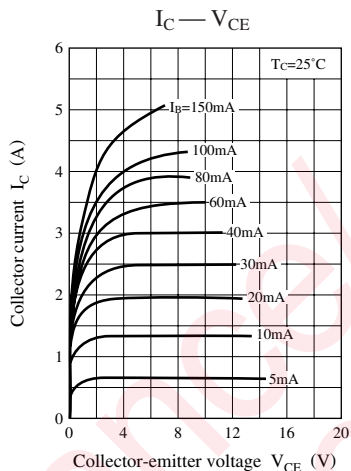
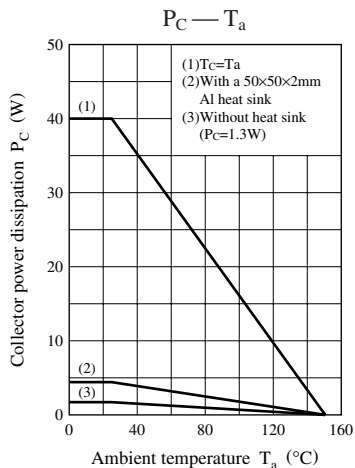
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

Rank	R	Q	P
h_{FE1}	40 to 90	70 to 150	120 to 250



Note) Self-supported type package is also prepared.



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