

2SD1752, 2SD1752A

Silicon NPN epitaxial planar type

For power amplification and low-voltage switching

Complementary to 2SB1148 and 2SB1148A

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- High-speed switching
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Large collector current I_C
- I 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)	2SD1752	V_{CBO}	40	V
	2SD1752A		50	
Collector-emitter voltage (Base open)	2SD1752	V_{CEO}	20	V
	2SD1752A		40	
Emitter-base voltage (Collector open)	V_{EBO}	5	V	
Collector current	I_C	10	A	
Peak collector current	I_{CP}	20	A	
Collector power dissipation	P_C		15	W
		$T_a = 25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

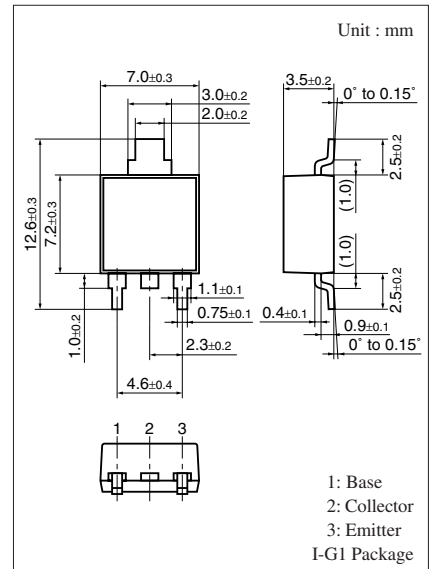
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1752	$I_C = 10\text{ mA}, I_B = 0$	20			V
	2SD1752A		40			
Collector-base cutoff current (Emitter open)	2SD1752	$V_{CB} = 40\text{ V}, I_E = 0$			50	μA
	2SD1752A	$V_{CB} = 50\text{ V}, I_E = 0$			50	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			50	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 2\text{ V}, I_C = 0.1\text{ A}$	45			—
	h_{FE2}^*	$V_{CE} = 2\text{ V}, I_C = 3\text{ A}$	90		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{ A}, I_B = 0.33\text{ A}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10\text{ A}, I_B = 0.33\text{ A}$			1.5	V
Forward current transfer ratio	f_T	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 10\text{ MHz}$		120		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		200		pF
Turn-on time	t_{on}	$I_C = 3\text{ A}, I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}$ $V_{CC} = 20\text{ V}$		0.3		μs
Storage time	t_{stg}			0.4		μs
Fall time	t_f			0.1		μs

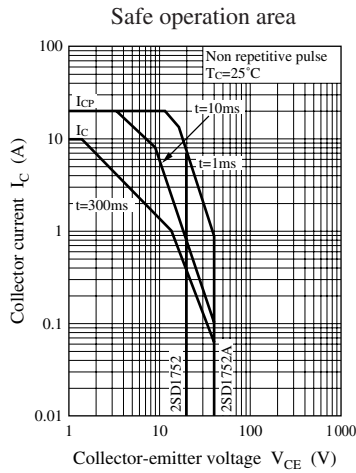
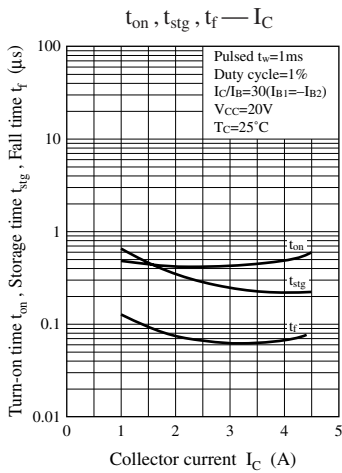
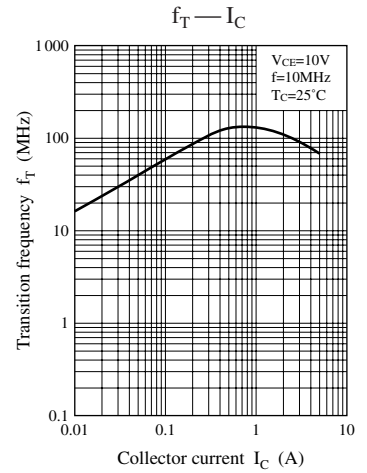
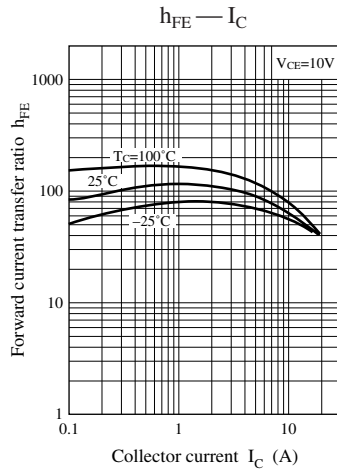
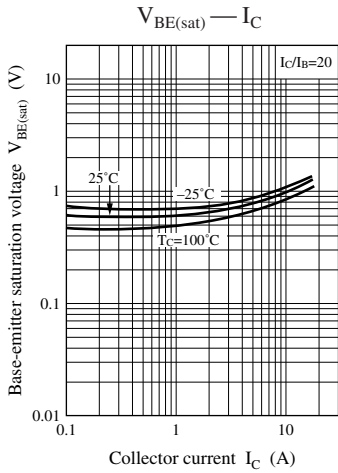
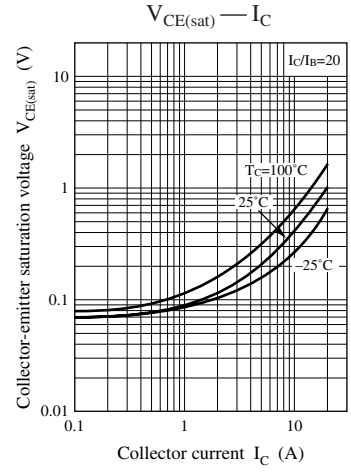
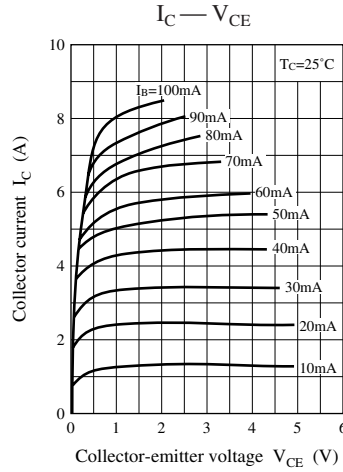
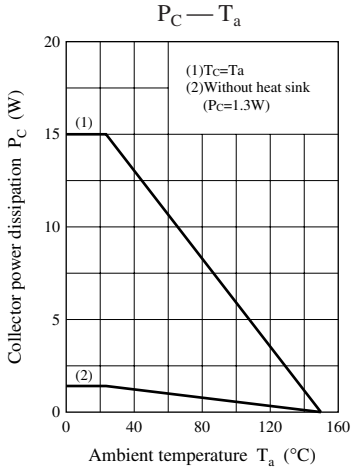
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

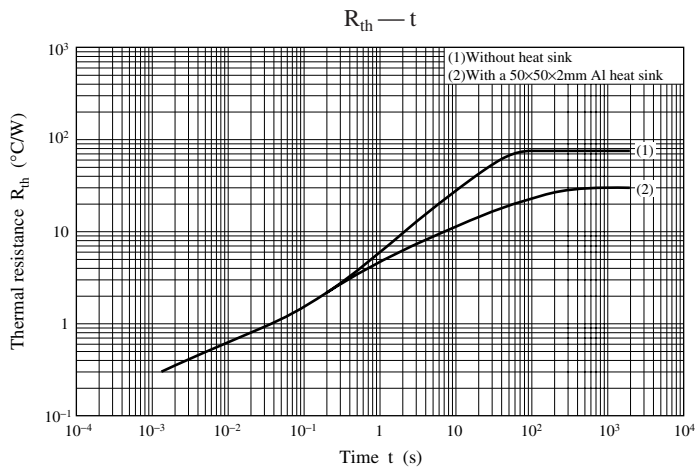
2. *: Rank classification

Rank	Q	P
h_{FE2}	90 to 180	130 to 260



Note) Self-supported type package is also prepared.





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