

# 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	40	V
	2SD1752A	50	
Collector-emitter voltage (Base open)	2SD1752	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
		$T_a = 25^\circ\text{C}$	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

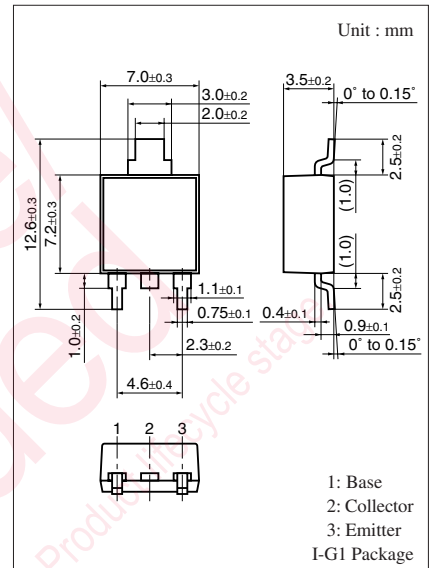
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

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	$\mu\text{A}$
	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	$\mu\text{A}$
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		$\mu\text{s}$
Storage time	$t_{stg}$			0.4		$\mu\text{s}$
Fall time	$t_f$			0.1		$\mu\text{s}$

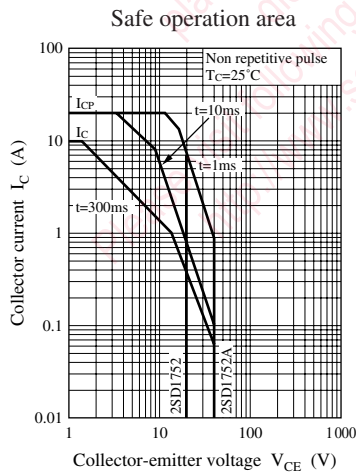
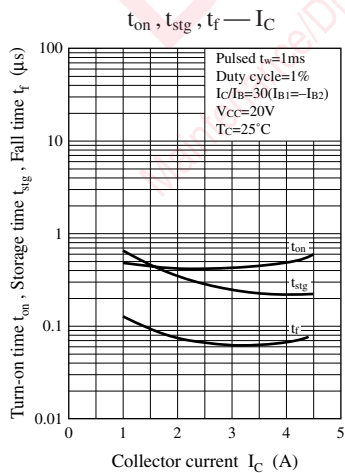
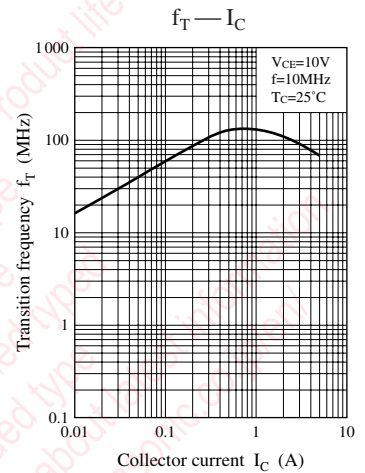
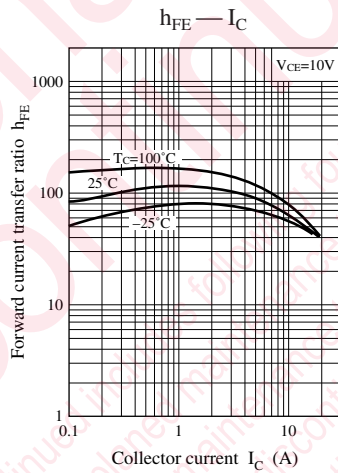
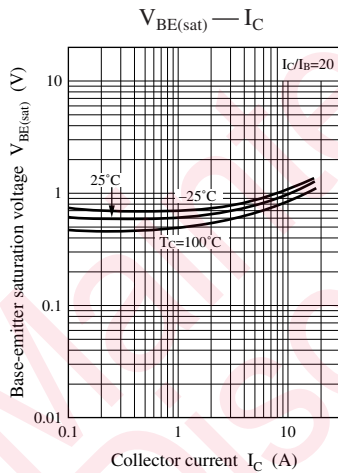
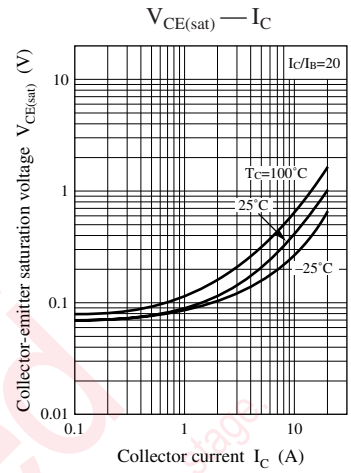
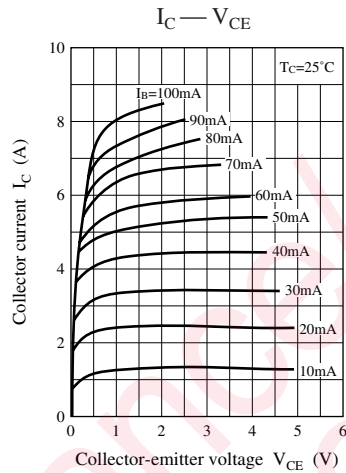
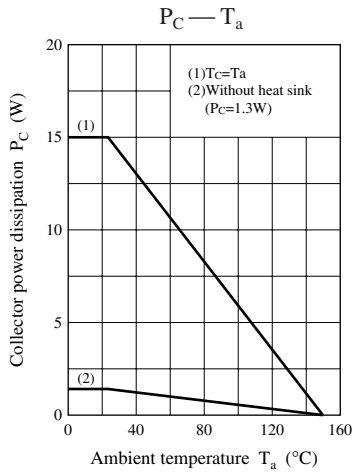
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

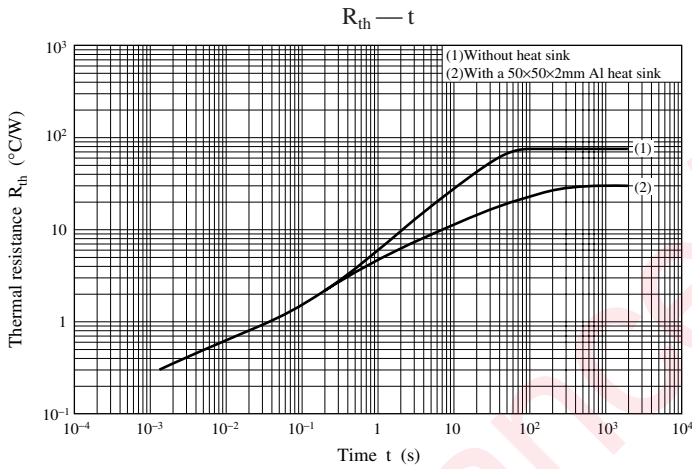
2. \*: Rank classification

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



Note) Self-supported type package is also prepared.





Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.  
 planned maintenance type  
 maintenance type  
 planned discontinued type  
 discontinued type  
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