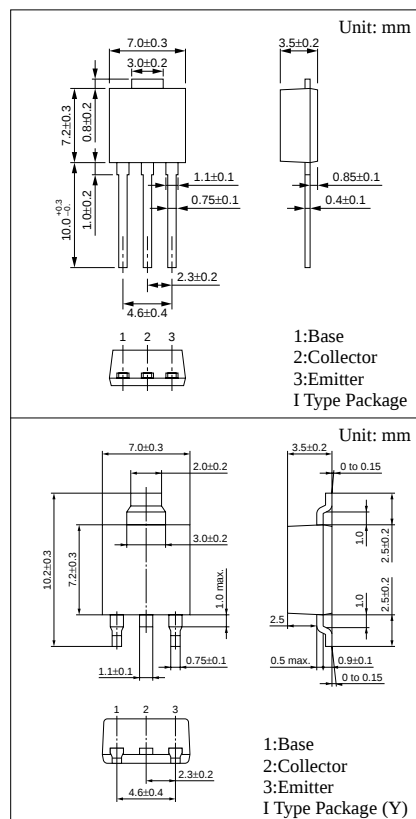


Silicon NPN epitaxial planar type

Complementary to 2SB1148 and 2SB1148A

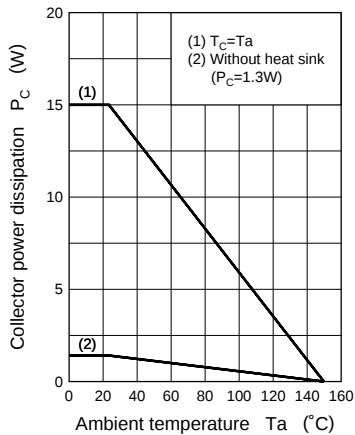
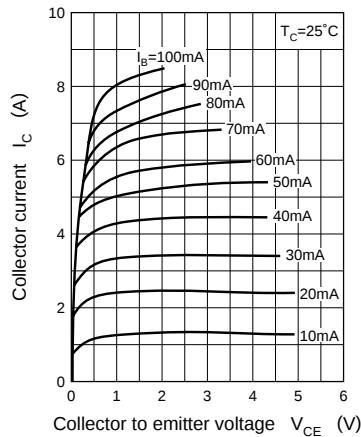
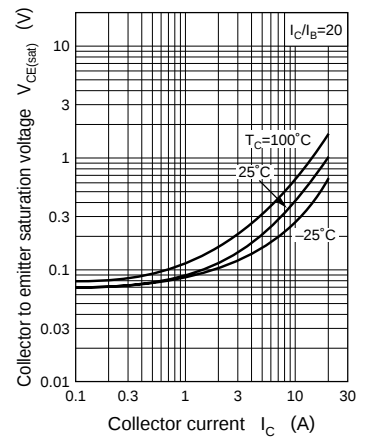
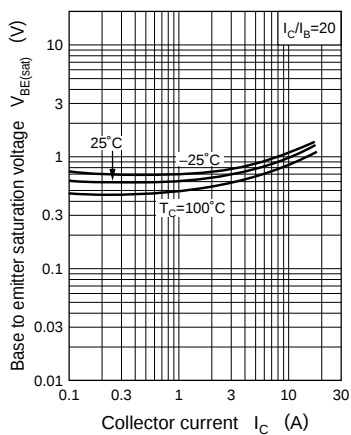
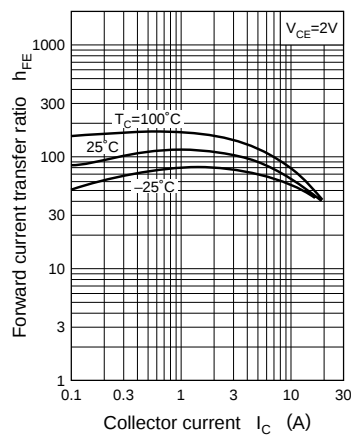
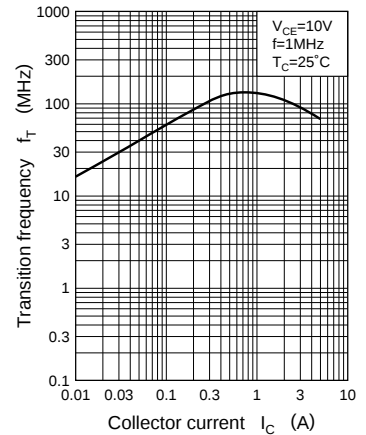
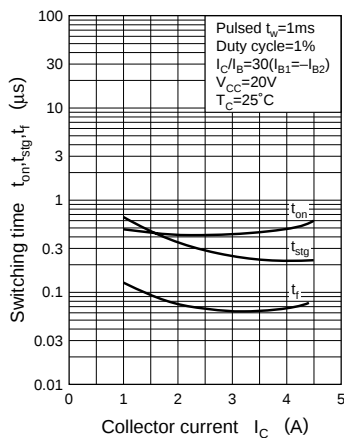
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- High-speed switching
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Large collector current I_C
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

Parameter		Symbol	Ratings	Unit
Collector to base voltage	2SD1752	V_{CBO}	40	V
	2SD1752A		50	
Collector to emitter voltage	2SD1752	V_{CEO}	20	V
	2SD1752A		40	
Emitter to base voltage		V_{EBO}	5	V
Peak collector current		I_{CP}	20	A
Collector current		I_C	10	A
Collector power dissipation	$T_C=25^{\circ}C$	P_C	15	W
	$T_a=25^{\circ}C$		1.3	
Junction temperature		T_j	150	$^{\circ}C$
Storage temperature		T_{sig}	-55 to +150	$^{\circ}C$



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

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

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $t_{on}, t_{stg}, t_f - I_C$ 

Area of safe operation (ASO)

