

2SD1755

Silicon NPN epitaxial planar type

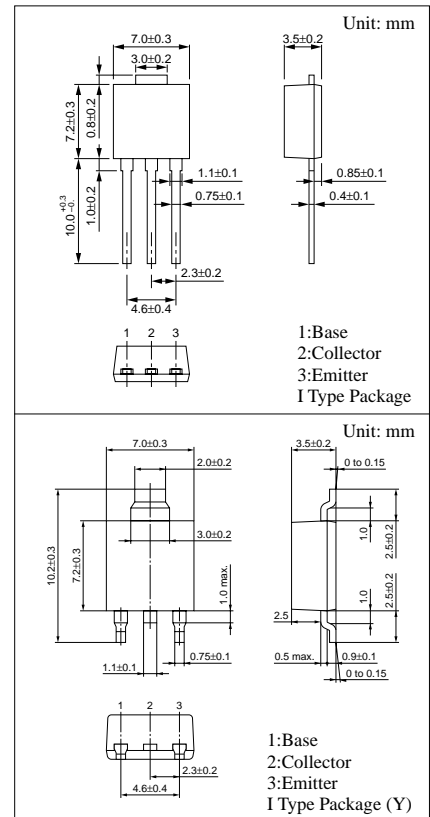
For power amplification with high forward current transfer ratio

Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- High emitter to base voltage V_{EBO}
- 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	Ratings	Unit
Collector to base voltage	V_{CBO}	100	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	15	V
Peak collector current	I_{CP}	12	A
Collector current	I_C	6	A
Base current	I_B	3	A
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	15
		$T_a=25^\circ\text{C}$	1.3
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



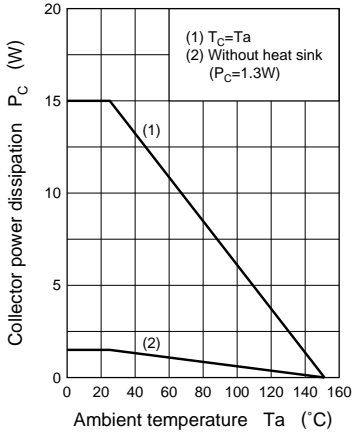
Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 15\text{V}, I_C = 0$			100	μA
Collector to emitter voltage	V_{CEO}	$I_C = 25\text{mA}, I_B = 0$	60			V
Forward current transfer ratio	h_{FE}^*	$V_{CE} = 4\text{V}, I_C = 1\text{A}$	300		2000	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 0.1\text{A}$			0.5	V
Transition frequency	f_T	$V_{CE} = 12\text{V}, I_C = 0.5\text{A}, f = 10\text{MHz}$		50		MHz
Turn-on time	t_{on}	$I_C = 5\text{A}, I_{B1} = 0.1\text{A}, I_{B2} = -0.1\text{A}, V_{CC} = 50\text{V}$	0.3			μs
Storage time	t_{stg}			1.5		μs
Fall time	t_f				0.6	μs

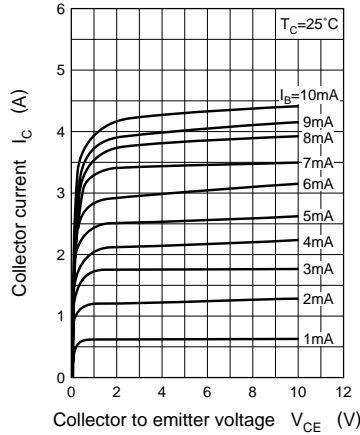
* h_{FE} Rank classification

Rank	Q	P
h_{FE}	300 to 1200	800 to 2000

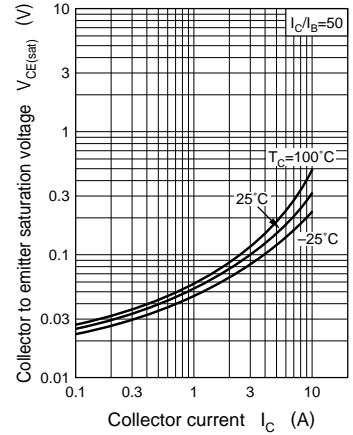
$P_C - T_a$



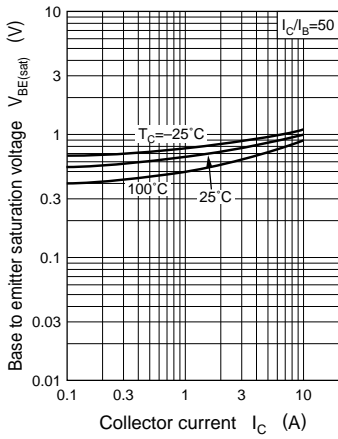
$I_C - V_{CE}$



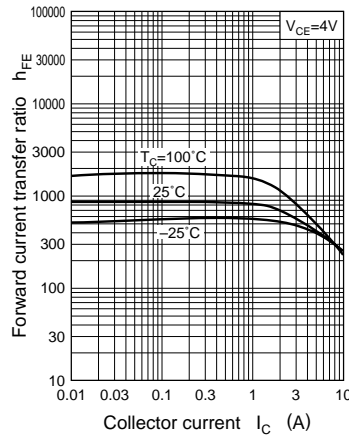
$V_{CE(sat)} - I_C$



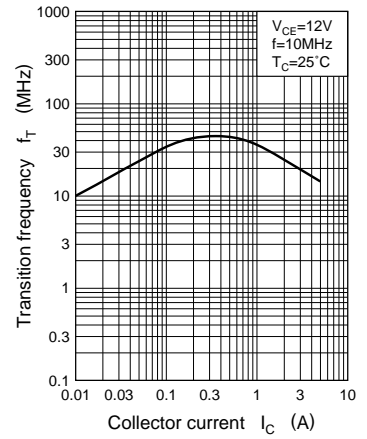
$V_{BE(sat)} - I_C$



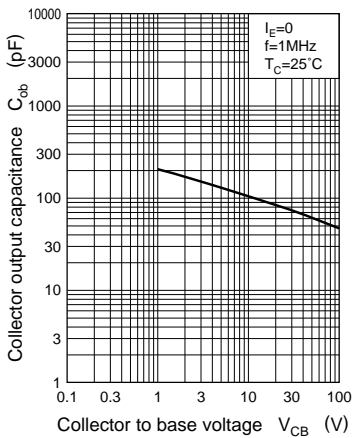
$h_{FE} - I_C$



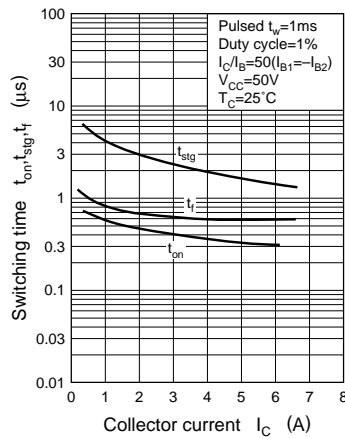
$f_T - I_C$



$C_{ob} - V_{CB}$



$t_{on}, t_{stg}, t_f - I_C$



Area of safe operation (ASO)

