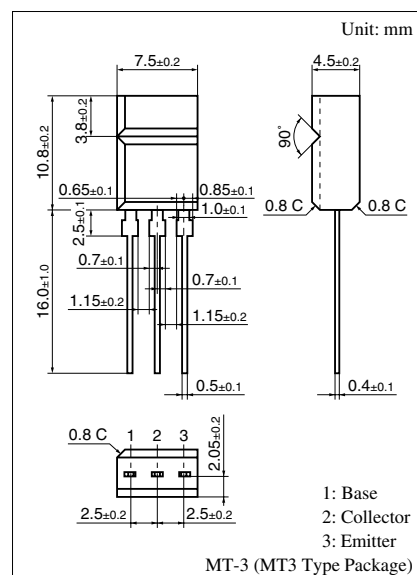


Silicon NPN triple diffusion planar type

Complementary to 2SB1416

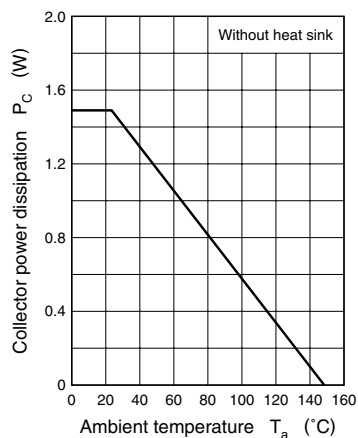
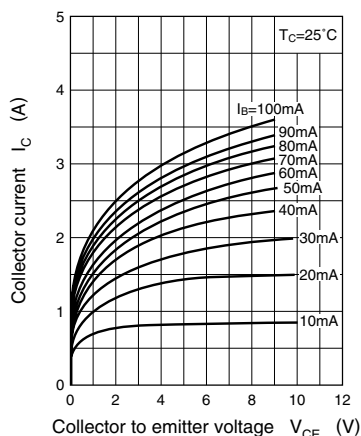
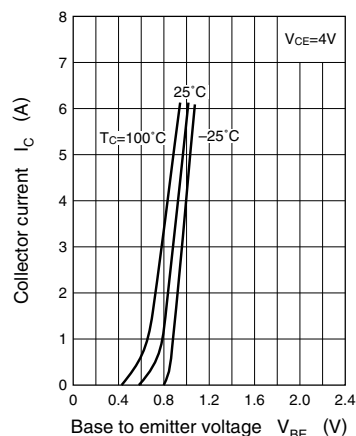
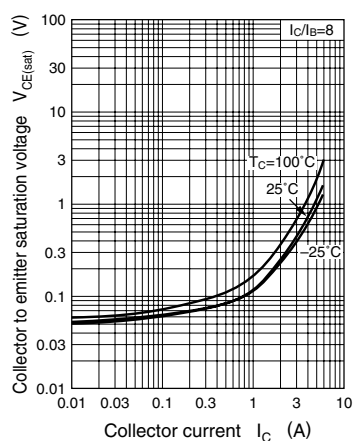
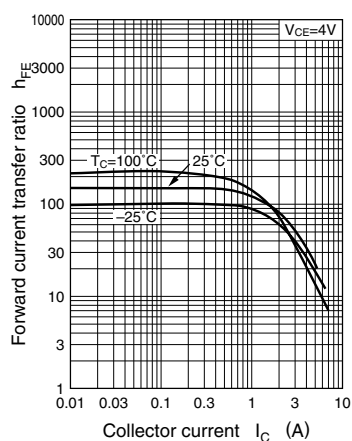
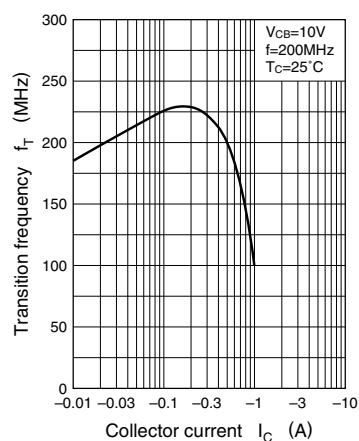
- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Allowing supply with the radial tapping

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	5	A
Collector current	I_C	3	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

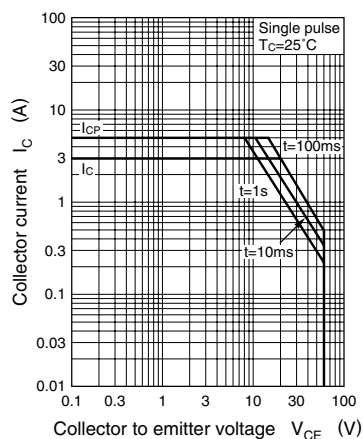
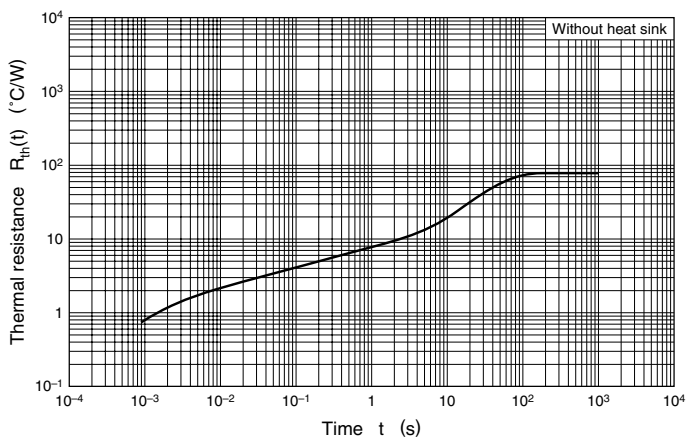


Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CES}	$V_{CE} = 60 \text{ V}, V_{BE} = 0$			200	μA
	I_{CEO}	$V_{CE} = 60 \text{ V}, I_B = 0$			300	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6 \text{ V}, I_C = 0$			1	mA
Collector to emitter voltage	V_{CEO}	$I_C = 30 \text{ mA}, I_B = 0$	60			V
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}$	40		250	
	h_{FE2}	$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$	10			
Base to emitter voltage	V_{BE}	$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$			1.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3 \text{ A}, I_B = 0.375 \text{ A}$			1.2	V
Transition frequency	f_T	$V_{CE} = 5 \text{ V}, I_E = -0.1 \text{ A}, f = 200 \text{ MHz}$		220		MHz
Turn-on time	t_{on}	$I_C = 1 \text{ A}, I_{B1} = 0.1 \text{ A}, I_{B2} = -0.1 \text{ A}$		0.5		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			0.4		μs

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

$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 

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