

# 2SD2544

## Silicon NPN triple diffusion planar type

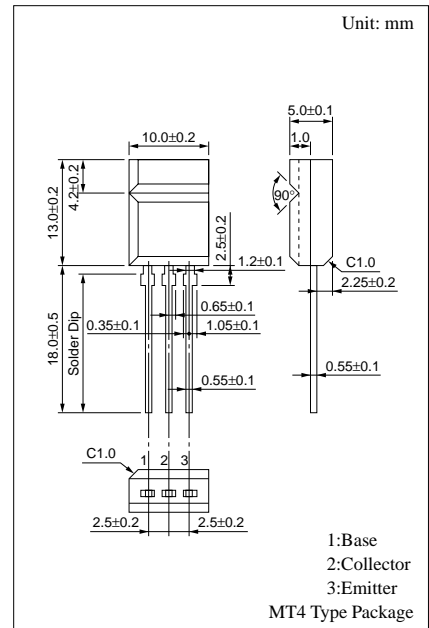
For power amplification with high forward current transfer ratio

### Features

- High forward current transfer ratio  $h_{FE}$
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- Allowing supply with the radial taping

### Absolute Maximum Ratings ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	$V_{CBO}$	60	V	
Collector to emitter voltage	$V_{CEO}$	60	V	
Emitter to base voltage	$V_{EBO}$	7	V	
Peak collector current	$I_{CP}$	8	A	
Collector current	$I_C$	4	A	
Collector power dissipation	$P_C$	$T_C=25^\circ\text{C}$	15	W
		$T_a=25^\circ\text{C}$	2	
Junction temperature	$T_j$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	



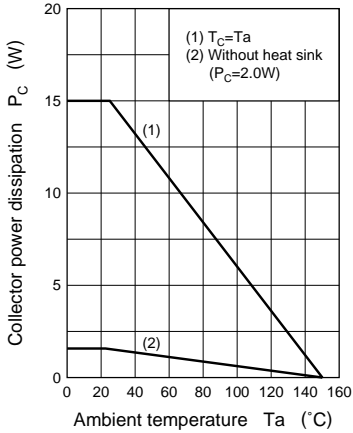
### Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 60\text{V}$ , $I_E = 0$			10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 7\text{V}$ , $I_C = 0$			10	$\mu\text{A}$
Collector to emitter voltage	$V_{CEO}$	$I_C = 10\text{mA}$ , $I_B = 0$	60			V
Forward current transfer ratio	$h_{FE1}^*$	$V_{CE} = 2\text{V}$ , $I_C = 0.8\text{A}$	500	1000	2000	
	$h_{FE2}$	$V_{CE} = 2\text{V}$ , $I_C = 2\text{A}$	60			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{A}$ , $I_B = 50\text{mA}$			0.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 2\text{A}$ , $I_B = 50\text{mA}$			1.5	V
Transition frequency	$f_T$	$V_{CE} = 10\text{V}$ , $I_C = 0.5\text{A}$ , $f = 10\text{MHz}$		70		MHz
Turn-on time	$t_{on}$	$I_C = 2\text{A}$ , $I_{B1} = 50\text{mA}$ , $I_{B2} = -50\text{mA}$ , $V_{CC} = 50\text{V}$		0.5		$\mu\text{s}$
Storage time	$t_{stg}$			3.6		$\mu\text{s}$
Fall time	$t_f$			1.1		$\mu\text{s}$

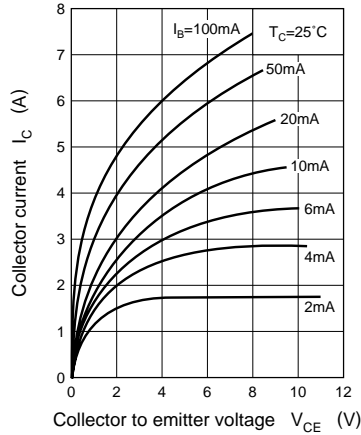
\* $h_{FE1}$  Rank classification

Rank	Q	P
$h_{FE1}$	500 to 1200	800 to 2000

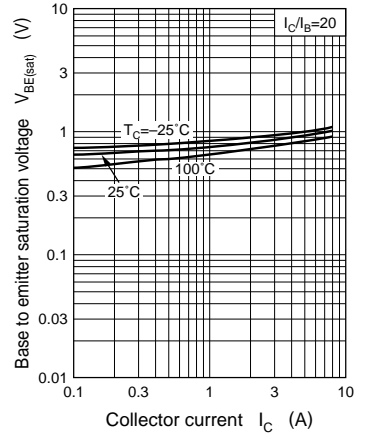
$P_C - T_a$



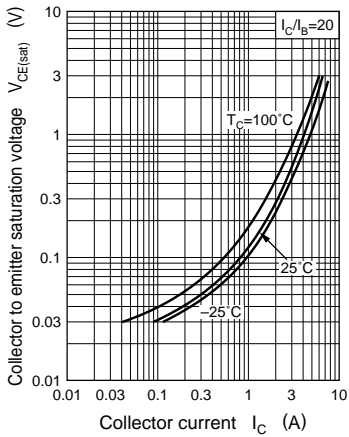
$I_C - V_{CE}$



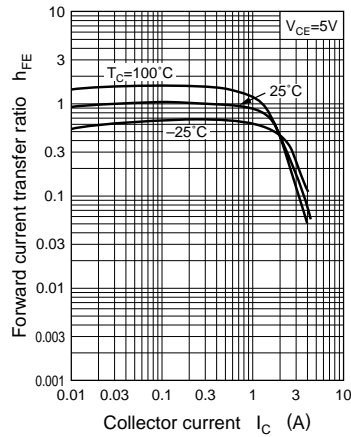
$V_{BE(sat)} - I_C$



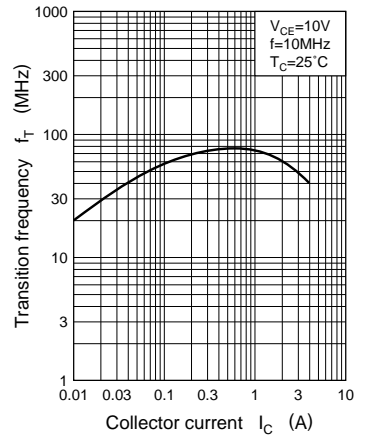
$V_{CE(sat)} - I_C$



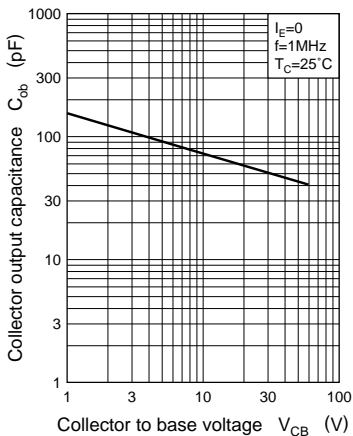
$h_{FE} - I_C$



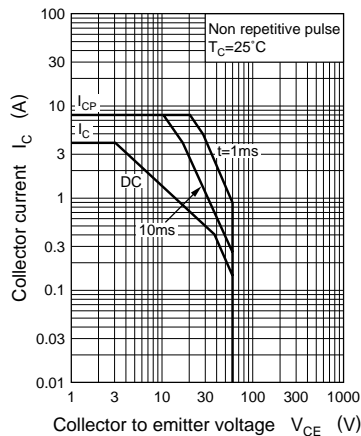
$f_T - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$$R_{th(t)} - t$$

