

2SC5405

Silicon NPN triple diffusion planar type

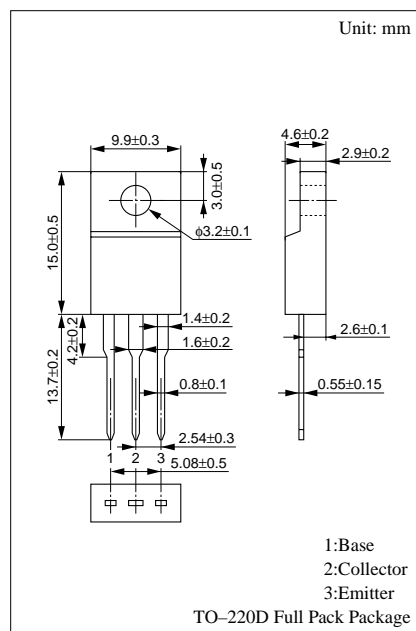
For high-speed switching and high current amplification ratio

■ Features

- High-speed switching
- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Dielectric breakdown voltage of the package: > 5kV

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

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	V_{CBO}	80	V	
Collector to emitter voltage	V_{CEO}	50	V	
Emitter to base voltage	V_{EBO}	6	V	
Peak collector current	I_{CP}	6	A	
Collector current	I_C	3	A	
Base current	I_B	1	A	
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	20	W
		$T_a=25^\circ\text{C}$	2.0	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	



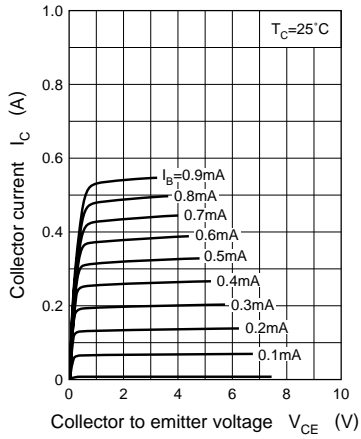
■ Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit	
Collector cutoff current	I_{CBO}	$V_{CB} = 80\text{V}, I_E = 0$			100	μA	
	I_{CEO}	$V_{CE} = 40\text{V}, I_B = 0$			100	μA	
Emitter cutoff current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			100	μA	
Collector to emitter voltage	V_{CEO}	$I_C = 25\text{mA}, I_B = 0$	50			V	
Forward current transfer ratio	h_{FE}^*	$V_{CE} = 4\text{V}, I_C = 0.5\text{A}$	500		1500		
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{A}, I_B = 0.05\text{A}$		0.5	0.7	V	
Base to emitter saturation voltage	$V_{BE(sat)}$					V	
Transition frequency	f_T	$V_{CE} = 12\text{V}, I_C = 0.2\text{A}, f = 10\text{MHz}$		75		MHz	
Turn-on time	t_{on}	$I_C = 1\text{A}, I_{B1} = 0.05\text{A}, I_{B2} = -0.1\text{A}, V_{CC} = 50\text{V}$		0.3		μs	
Storage time	t_{stg}				3.5		μs
Fall time	t_f				0.9		μs

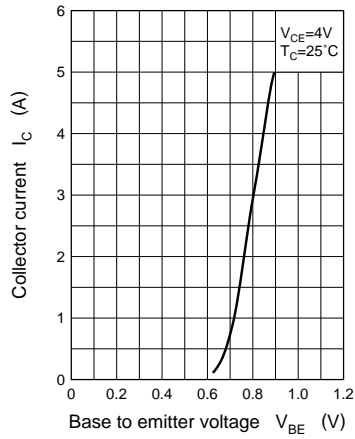
* h_{FE} Rank classification

Rank	P	Q
h_{FE}	800 to 1500	500 to 1000

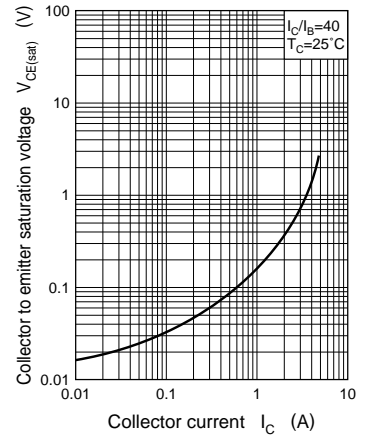
$I_C - V_{CE}$



$I_C - V_{BE}$



$V_{CE(sat)} - I_C$



$h_{FE} - I_C$

