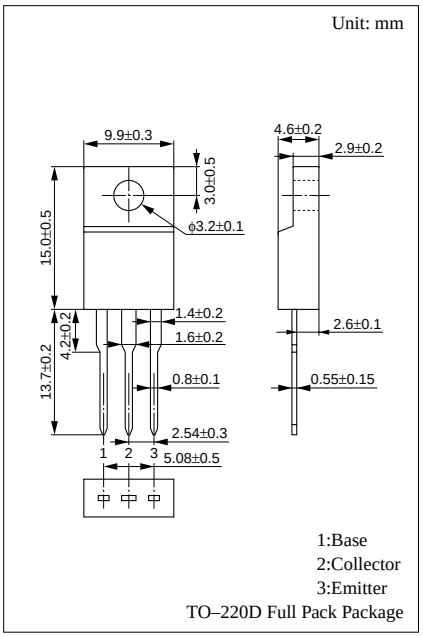
2SC5405

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˚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	T_C=25°C	P_C	20	W
	Ta=25°C		2.0	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

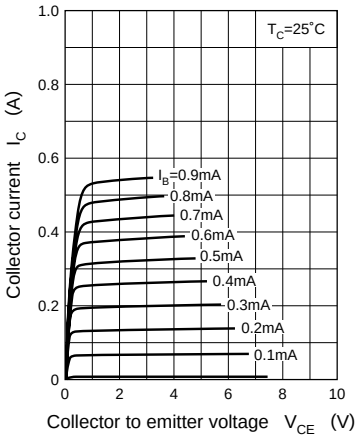
Electrical Characteristics (T_C=25˚C)

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

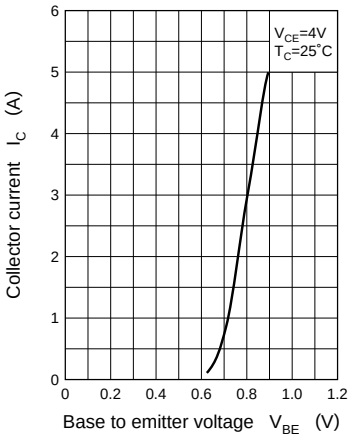
*h_{FE} Rank classification

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

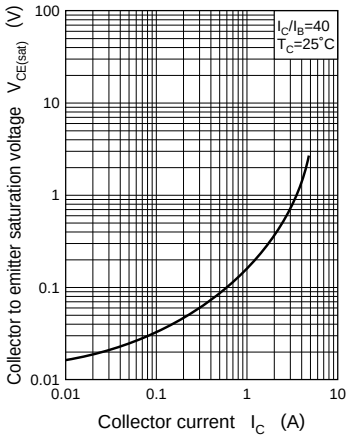
I_C — V_{CE}



I_C — V_{BE}



$V_{CE(sat)}$ — I_C



h_{FE} — I_C