2SC5809

Silicon NPN triple diffusion planar type

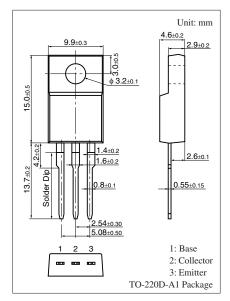
For high breakdown voltage high-speed switching

Features

- High-speed switching (Fall time t_f is short)
- High collector-base voltage (Emitter open) V_{CBO}
- \bullet Low collector-emitter saturation voltage $V_{CE(sat)}$
- TO-220D built-in: Excellent package with withstand voltage 5 kV guaranteed

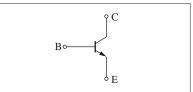
Absolute Maximum Ratings $T_c = 25^{\circ}C$									
Parameter	Symbol	Rating	Unit						
Collector-base voltage (En	V _{CBO}	800	V						
Collector-emitter voltage (Base open)		V _{CEO}	500	V					
Emitter-base voltage (Collector open)		V _{EBO}	8	V					
Collector current		I _C	3	А					
Peak collector current		I _{CP}	6	А					
Collector power	$T_C = 25^{\circ}C$	P _C	30	W					
dissipation	$T_a = 25^{\circ}C$		2						
Junction temperature		Tj	150	°C					
Storage temperature		T _{stg}	-55 to +150	°C					

Absolute Maximum Ratings $T_C = 25^{\circ}C$



Marking Symbol: C5809

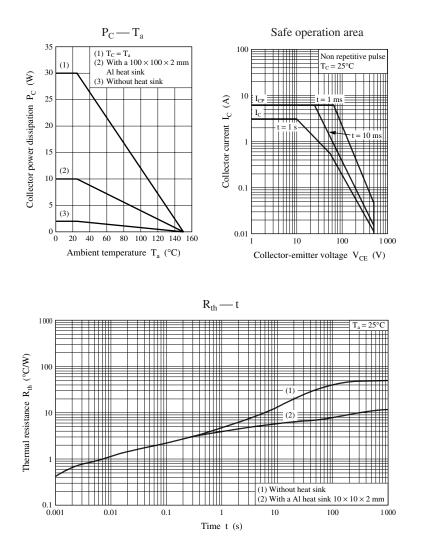
Internal Connection



Electrical Characteristics $T_C = 25^{\circ}C \pm 3^{\circ}C$

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-emitter voltage (Base open)	V _{CEO}	$I_{\rm C} = 10 \text{ mA}, I_{\rm B} = 0$	500			V
Collector-base cutoff current (Emitter open)	I _{CBO}	$V_{CB} = 800 \text{ V}, I_E = 0$			100	μΑ
Emitter-base cutoff current (Collector open)	I _{EBO}	$V_{EB} = 5 V, I_C = 0$			100	μΑ
Forward current transfer ratio	h _{FE1}	$V_{CE} = 5 V, I_C = 0.1 A$	15			
	h _{FE2}	$V_{CE} = 5 V, I_C = 3 A$	8			
Collector-emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 3 \text{ A}, I_{\rm B} = 0.6 \text{ A}$		0.3	0.6	V
Transition frequency	f _T	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}, f = 1 \text{ MHz}$		8		MHz
Turn-on time	t _{on}	$I_C = 3.0 \text{ A}$, Resistance loaded		1.1		μs
Storage time	t _{stg}	$I_{B1} = 0.6 \text{ A}, I_{B2} = -0.6 \text{ A}$		2.0		μs
Fall time	t _f	$V_{CC} = 200 V$		0.3		μs

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



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