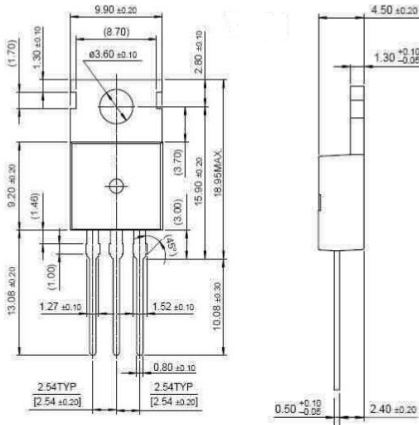


Appearance: TO-220-3L

Product name: Silicon NPN high voltage switching transistor

Model: 13009

Uses: Mainly used in energy-saving lamps, rectifiers, and other switches, oscillating circuits



B C E

Limit range (TA=25 ° C unless otherwise specified)

Project	Symbol	Rated value	Unit
Collector-emitter voltage (IB=0)	V _{CEO}	400	V
Collector-base voltage	V _{CBO}	700	V
Emitter-base voltage	V _{EBO}	9	V
Collector current	I _c	12	A
Collector dissipation power	P _c	120	W
Junction temperature	T _{jm}	150	°C
Storage temperature	T _{stg}	-55~+150	°C

Electrical parameter characteristics (TA=25 ° C unless otherwise specified)

Project	Symbol	Test condition	Min	Typical	Max	Unit
Collector-base cutoff current	I _{CBO}	V _{CB} =700V, I _E =0			1	uA
Collector-emitter cut-off current	I _{CEO}	V _{CB} =400V, I _E =0			1	uA
Emitter-base cut-off current	I _{EBO}	V _{EB} =9V, I _C =0			1	uA
Collector-emitter voltage	BV _{CEO}	I _C =1mA, I _B =0	410			V
Collector-base breakdown voltage	BV _{CBO}	I _C =0.1mA, I _E =0	700			V
Emitter-base breakdown voltage	BV _{EB}	I _C =0.1mA, I _C =0	9			V
Collector-emitter saturation voltage	V _{CEsat}	I _C =5A, I _B =1A			1	V
		I _C =8A, I _B =1.6A			1.5	V
Current amplification	H _{FE}	V _{CE} =5V, I _C =3A	25		35	
		V _{CE} =5V, I _C =8A	10			
Storage time	T _S	UI9600, I _C =0.5A	4		6	uS
Characteristic frequency	f _T	V _{CE} =10V, I _C =0.5A f=1MHz	4			MHz

Typical characteristic curves

Fig1 SOA (DC)

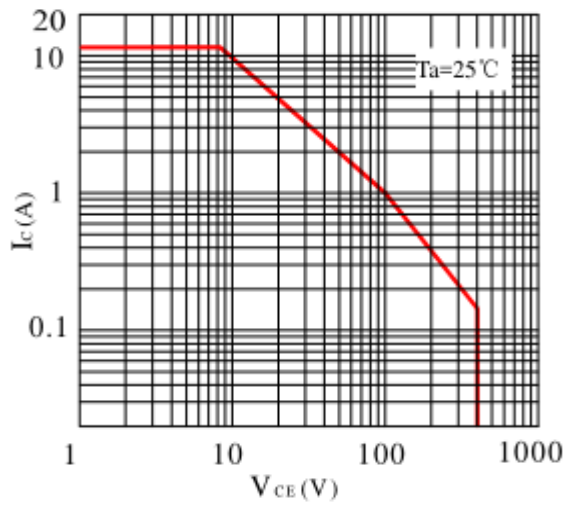


Fig2 Ptot - T

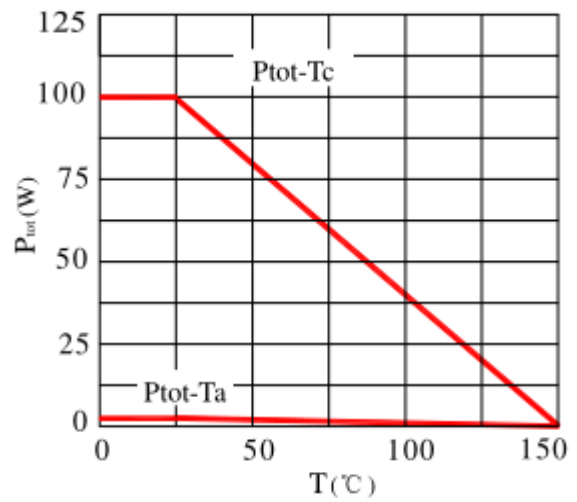


Fig3 Static Characteristic

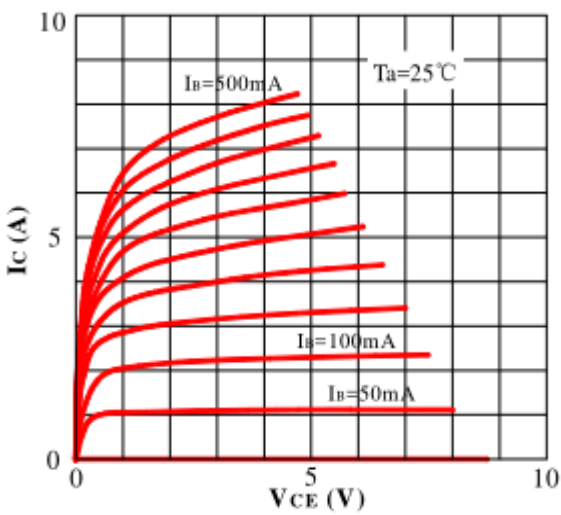


Fig4 hFE-Ic

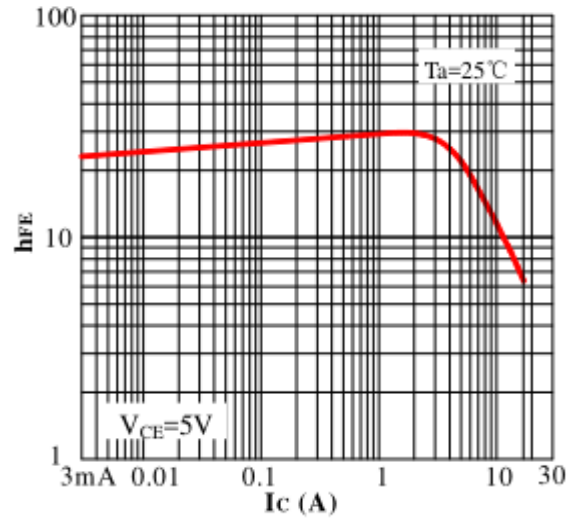


Fig5 VCESat-Ic

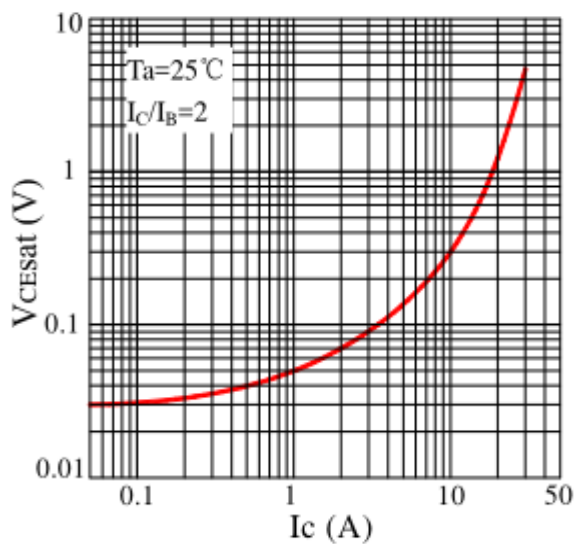


Fig6 VBEsat-Ic

