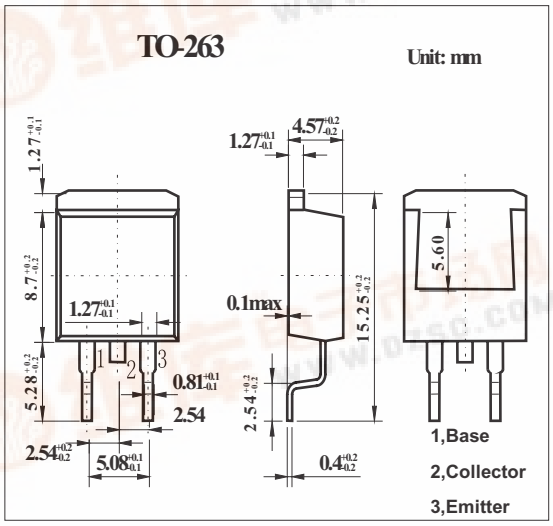
NPN Triple Diffused Planar Silicon Transistor

2SC4598



Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SC4598-applied equipment.
- High density surface mount applications.
- Small size of 2SC4598-applied equipment.
- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	500	V
Collector-emitter voltage	V_{CEO}	400	V
Emitter-base voltage	V_{EBO}	7	V
Collector current (DC)	I_C	7	A
Collector current (Pulse) *	I_{CP}	14	
Base current	I_B	3	A
Collector power dissipation Ta = 25℃	P_C	1.65	W
Tc = 25℃		50	
Junction temperature	T_j	150	℃
Storage temperature range	T_{stg}	-55 to +150	℃

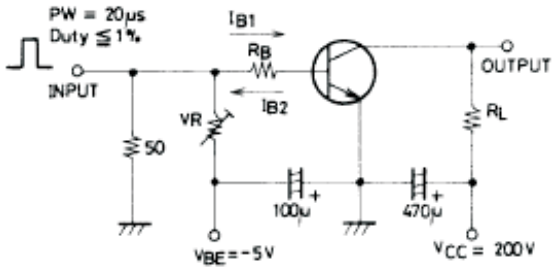
* PW≤300ms, duty cycle≤10%

2SC4598

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 400 V, I_E = 0			10	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0			10	μA
DC current gain	h_{FE}	V_{CE} = 5 V, I_C = 0.8A	15		50	
		V_{CE} = 5 V, I_C = 4A	10			
		V_{CE} = 5 V, I_C =10mA	10			
Gain-Bandwidth product	fT	V_{CE} = 10 V, I_C =0.8A		20		MHz
Output Capacitance	Cob	V_{CB}=10V,f=1MHz		80		pF
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 4 A, I_B = 0.8 A			0.8	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$	I_C = 4 A, I_B = 0.8 A			1.5	V
Collector-base breakdown voltage	$V_{(BR)\ CBO}$	I_C = 1 mA, I_E = 0	500			V
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 5 mA,RBE=∞	400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA,I_C=0	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEX(SUS)}$	I_C=3A,I_{B1}=0.3A,L=1mH,I_{B2}=-1.2A	400			V
Turn-ON time	ton	I_C=3A,I_{B1}=0.6A,I_{B2}=-1.2A,R_L=66.6 Ω,V_{CC}=200V			0.5	μs
Storage time	tstg				2.5	
Fall time	tf				0.3	

■ Switching Time Test Circuit



Unit (resistance : Ω, capacitance : F)

■ h_{FE} Classification

Rank	L	M	N
hFE	15 to 30	20 to 40	30 to 50