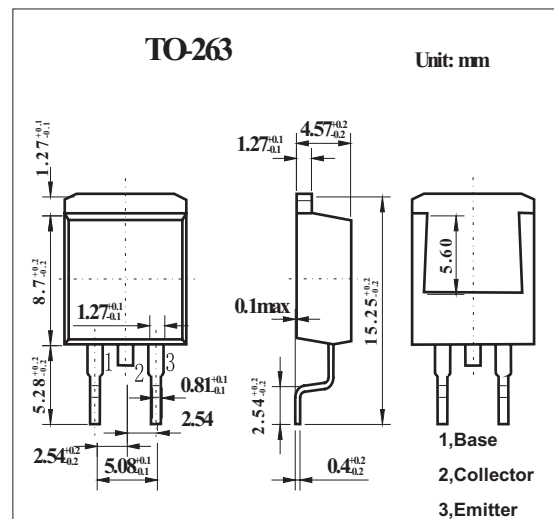


NPN Triple Diffused Planar Silicon Transistor

2SC4599

■ Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SC4599-applied equipment.
- High density surface mount applications.
- Small size of 2SC4599-applied equipment.
- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Collector-base voltage	V_{CB0}	800	V	
Collector-emitter voltage	V_{CE0}	500	V	
Emitter-base voltage	V_{EB0}	7	V	
Collector current (DC)	I_C	3	A	
Collector current (Pulse) *	I_{CP}	6		
Base current	I_B	1	A	
Collector power dissipation	P_C	$T_a = 25^\circ\text{C}$	1.65	W
		$T_C = 25^\circ\text{C}$	40	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$	

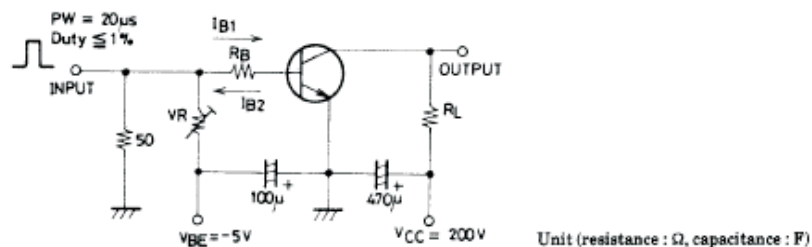
* $PW \leq 300\text{ms}$, duty cycle $\leq 10\%$

2SC4599

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cut-off current	IcBO	V _{CB} = 500 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 = 0.3A	15		50	
		V _{CE} = 5 V, I _C = 1.5A	8			
Gain-Bandwidth product	f _T	V _{CE} = 10 V, I _C = 0.3A		18		MHz
Output Capacitance	C _{ob}	V _{CB} = 10V, f = 1MHz		50		pF
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 1.5 A, I _B = 0.3 A			1.0	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 1.5 A, I _B = 0.3 A			1.5	V
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 1 mA, I _E = 0	800			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 5 mA, R _{BE} = ∞	500			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E = 1mA, I _C = 0	7			V
Collector-to-Emitter Sustain Voltage	V _{CES(SUS)}	I _C = 1.5A, I _{B1} = 0.6A, L = 2mH, I _{B2} = -0.6A	500			V
Turn-ON time	t _{on}	I _C = 2A, I _{B1} = 0.4A, I _{B2} = -0.8A, R _L = 100 Ω, V _{CC} = 200V			0.5	μs
Storage time	t _{stg}				3.0	
Fall time	t _f				0.3	

■ Switching Time Test Circuit



■ hFE Classification

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