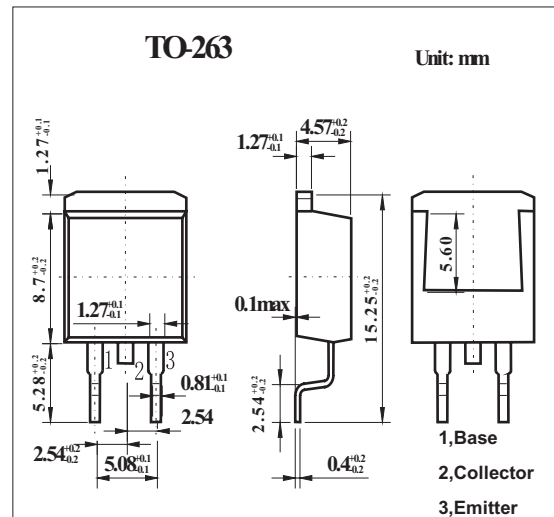


NPN Triple Diffused Planar Silicon Transistor

2SC4601

■ Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SC4601-applied equipment.
- High density surface mount applications.
- Small size of 2SC4601-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_{CBO}	1100	V
Collector-emitter voltage	V_{CEO}	800	V
Emitter-base voltage	V_{EBO}	7	V
Collector current (DC)	I_C	1.5	A
Collector current (Pulse) *	I_{CP}	5	
Base current	I_B	0.8	A
Collector power dissipation	P_C	$T_a = 25^\circ\text{C}$	1.65
		$T_c = 25^\circ\text{C}$	40
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$

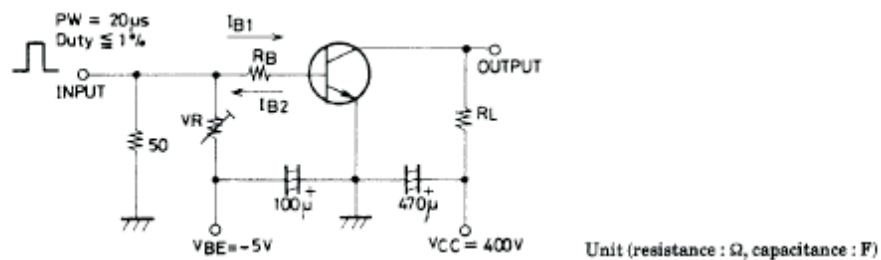
* $PW \leq 300\text{ms}$, duty cycle $\leq 10\%$

2SC4601

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 800\text{ V}, I_E = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			10	μA
DC current gain	h_{FE}	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	10		40	
		$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}$	8			
Gain-Bandwidth product	f_T	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$		15		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$		35		pF
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 0.75\text{ A}, I_B = 0.15\text{ A}$			2.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 0.75\text{ A}, I_B = 0.15\text{ A}$			1.5	V
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_E = 0$	1100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 5\text{ mA}, R_{BE} = \infty$	800			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{ mA}, I_C = 0$	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEO(SUS)}$	$I_C = 0.75\text{ A}, I_{B1} = -I_{B2} = 0.15\text{ A}, L = 50\text{ mH}$	800			V
Turn-ON time	t_{on}	$I_C = 1\text{ A}, I_{B1} = 0.2\text{ A}, I_{B2} = -0.4\text{ A}, R_L = 400\ \Omega, V_{CC} = 400\text{ V}$			0.5	μs
Storage time	t_{stg}				3.0	
Fall time	t_f				0.3	

■ Switching Time Test Circuit

■ h_{FE} Classification

Rank	K	L	M
h_{FE}	10 to 20	15 to 30	20 to 40