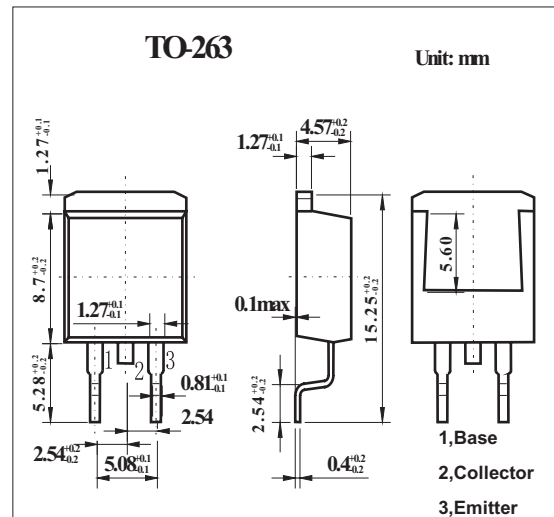


## NPN Triple Diffused Planar Silicon Transistor

## 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	$P_C$	$T_a = 25^\circ\text{C}$	W
		$T_c = 25^\circ\text{C}$	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

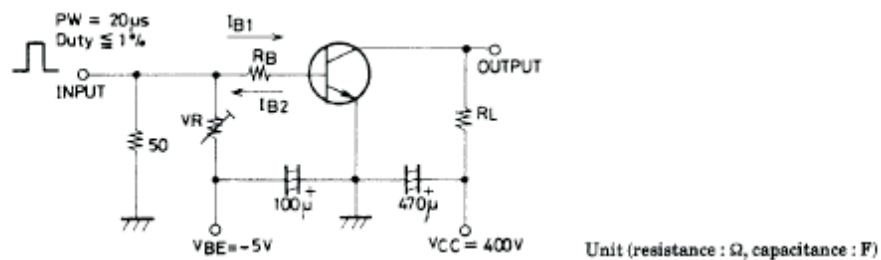
\*  $PW \leq 300\text{ms}$ , duty cycle  $\leq 10\%$

## 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	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$			10	$\mu\text{A}$
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	$\mu\text{s}$
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