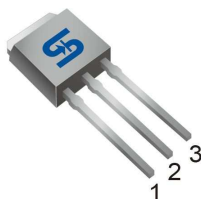
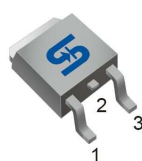


TO-251  
(IPAK)



TO-252  
(DPAK)



**Pin Definition:**

1. Base
2. Collector
3. Emitter

**PRODUCT SUMMARY**

<b><math>BV_{CEO}</math></b>	450V
<b><math>BV_{CBO}</math></b>	1050V
<b><math>I_C</math></b>	2A
<b><math>V_{CE(SAT)}</math></b>	0.5V @ $I_C=0.7A, I_B=0.14A$

**Features**

- High Voltage Capability
- High Switching Speed

**Structure**

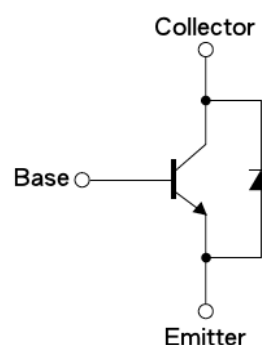
- Silicon Triple Diffused Type
- NPN Silicon Transistor

**Ordering Information**

Part No.	Package	Packing
TSC5802DCH C5G	TO-251	75pcs / Tube
TSC5802DCP ROG	TO-252	2.5Kpcs / 13" Reel

**Note:** "G" denote for Halogen Free Product

**Block Diagram**



**Absolute Maximum Rating** ( $T_A = 25^\circ C$ , unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	1050	V
Collector-Emitter Voltage @ $V_{BE}=0V$	$V_{CES}$	450	V
Emitter-Base Voltage	$V_{EBO}$	15	V
Collector Current	$I_C$	2	A
Collector Peak Current ( $t_p < 5ms$ )	$I_{CM}$	4	A
Base Current	$I_B$	1.5	A
Base Peak Current ( $t_p < 5ms$ )	$I_{BM}$	3	A
Power Total Dissipation @ $T_c=25^\circ C$	$P_{DTOT}$	30	W
Maximum Operating Junction Temperature	$T_J$	+150	$^\circ C$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ C$

**Note:** Single Pulse.  $P_w = 300\mu S$ , Duty  $\leq 2\%$

**Thermal Performance**

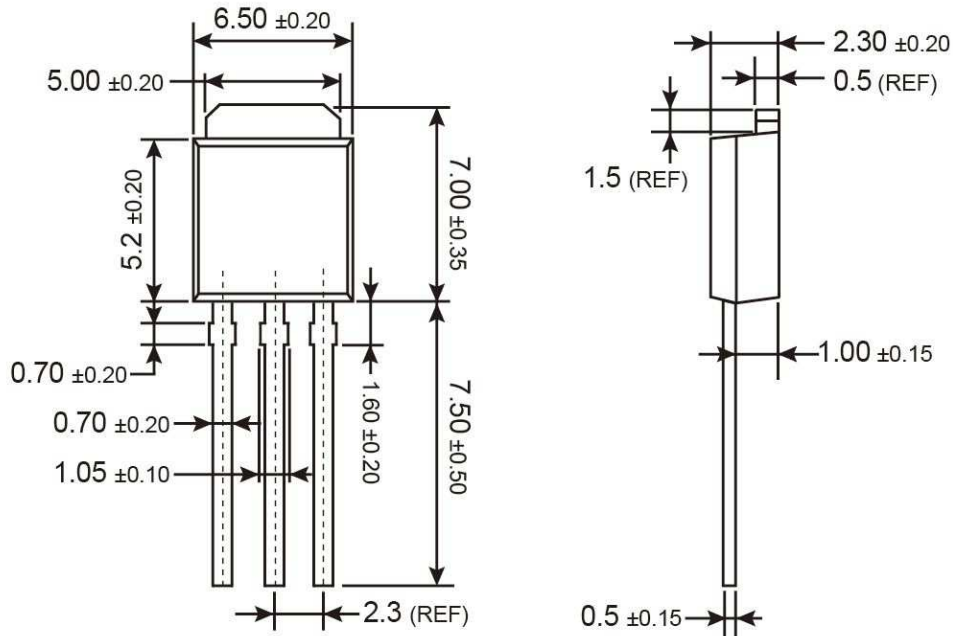
Parameter	Symbol	Limit	Unit
Thermal Resistance – Junction to Case	$R_{\theta_{JC}}$	4.17	$^\circ C/W$
Thermal Resistance - Junction to Ambient	$R_{\theta_{JA}}$	100	$^\circ C/W$

### Electrical Specifications (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static</b>						
Collector-Base Voltage	I <sub>C</sub> = 0.5mA	BV <sub>CBO</sub>	1050	--	--	V
Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 5mA	BV <sub>CEO</sub>	450	--	--	V
Emitter-Base Breakdown Voltage	I <sub>E</sub> = 1mA	BV <sub>EBO</sub>	15	--	--	V
Collector Cutoff Current	V <sub>CE</sub> = 400V, I <sub>B</sub> = 0	I <sub>CEO</sub>	--	10	250	μA
Collector Cutoff Current	V <sub>CB</sub> = 950V, I <sub>E</sub> = 0	I <sub>CBO</sub>	--	--	10	μA
Collector-Emitter Saturation Voltage	I <sub>C</sub> = 0.7A, I <sub>B</sub> = 0.14A	V <sub>CE(SAT)1</sub>	---	--	0.5	V
Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.6A	V <sub>CE(SAT)2</sub>	---	1.5	3.0	V
Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.6A	V <sub>BE(SAT)1</sub>	--	1.0	1.6	V
DC Current Gain	V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA	h <sub>FE1</sub>	50	70	100	
	V <sub>CE</sub> = 3V, I <sub>C</sub> = 500mA	h <sub>FE2</sub>	18	23	50	
Diode Forward Voltage	I <sub>C</sub> = 1A	V <sub>F</sub>	--	--	1.5	V
<b>Resistive Load Switching Time (Ratings)</b>						
Rise Time	V <sub>CC</sub> = 5V, I <sub>C</sub> = 0.5A,	t <sub>r</sub>	--	--	1	μS
Storage Time		t <sub>STG</sub>	2.5	3	3.5	μS
Fall Time		t <sub>f</sub>	--	--	1.2	μS

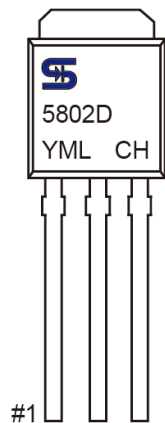
**Notes:** Pulsed duration = 380μS, duty cycle ≤ 2%

**TO-251 Mechanical Drawing**



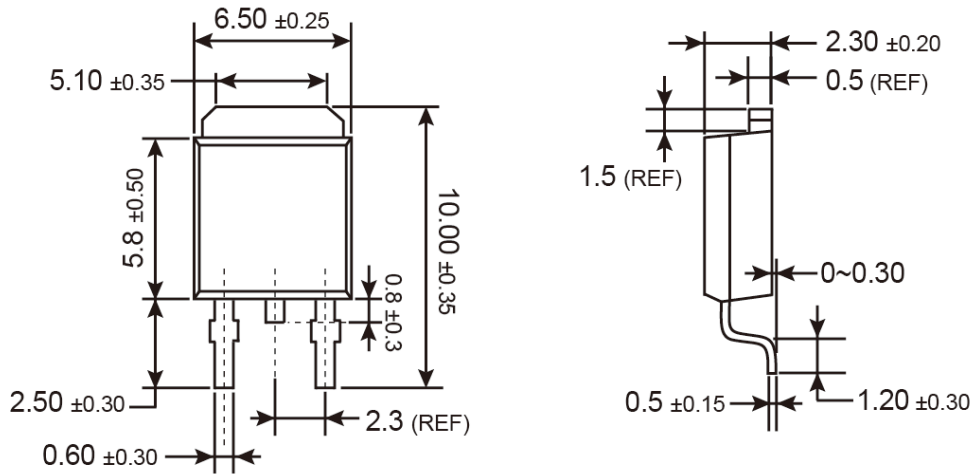
Unit: Millimeters

**Marking Diagram**



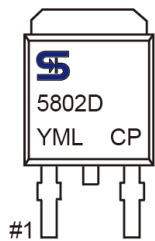
- Y** = Year Code
- M** = Month Code for Halogen Free Product  
(**O**=Jan, **P**=Feb, **Q**=Mar, **R**=Apr, **S**=May, **T**=Jun, **U**=Jul, **V**=Aug, **W**=Sep, **X**=Oct, **Y**=Nov, **Z**=Dec)
- L** = Lot Code

### TO-252 Mechanical Drawing



Unit: Millimeters

### Marking Diagram



- Y** = Year Code
- M** = Month Code for Halogen Free Product  
(**O**=Jan, **P**=Feb, **Q**=Mar, **R**=Apr, **S**=May, **T**=Jun, **U**=Jul, **V**=Aug, **W**=Sep, **X**=Oct, **Y**=Nov, **Z**=Dec)
- L** = Lot Code

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