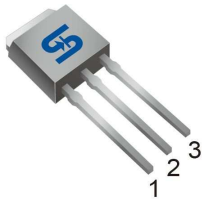
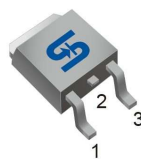


TO-251
(IPAK)



TO-252
(DPAK)



Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

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

Features

- High Voltage Capability
- High Switching Speed

Structure

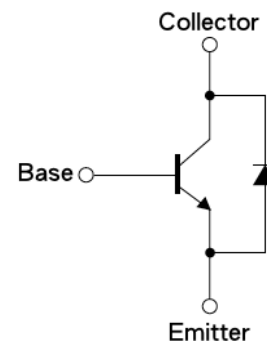
- Silicon Triple Diffused Type
- NPN Silicon Transistor

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 ($T_A = 25^\circ\text{C}$, 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 @ $T_c=25^\circ\text{C}$	P_{DTOT}	30	W
Maximum Operating Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Note: Single Pulse. $P_w = 300uS$, Duty $\leq 2\%$

Thermal Performance

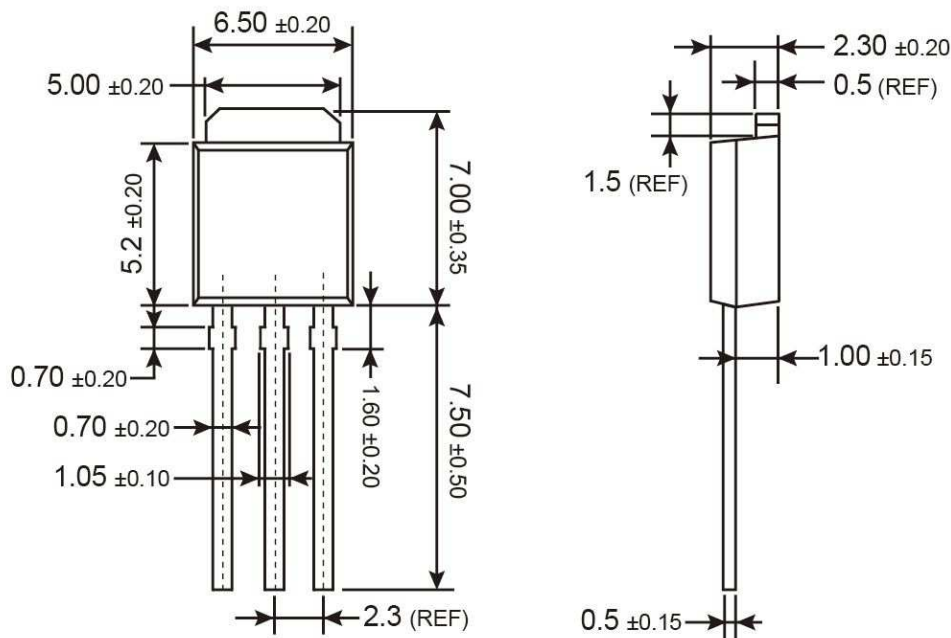
Parameter	Symbol	Limit	Unit
Thermal Resistance – Junction to Case	$R_{\theta_{JC}}$	4.17	$^\circ\text{C/W}$
Thermal Resistance - Junction to Ambient	$R_{\theta_{JA}}$	100	$^\circ\text{C/W}$

Electrical Specifications ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	$I_C = 0.5\text{mA}$	BV_{CBO}	1050	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}$	BV_{CEO}	450	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}$	BV_{EBO}	15	--	--	V
Collector Cutoff Current	$V_{CE} = 400\text{V}, I_B = 0$	I_{CEO}	--	10	250	μA
Collector Cutoff Current	$V_{CB} = 950\text{V}, I_E = 0$	I_{CBO}	--	--	10	μA
Collector-Emitter Saturation Voltage	$I_C = 0.7\text{A}, I_B = 0.14\text{A}$	$V_{CE(SAT)1}$	---	--	0.5	V
Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.6\text{A}$	$V_{CE(SAT)2}$	---	1.5	3.0	V
Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.6\text{A}$	$V_{BE(SAT)1}$	--	1.0	1.6	V
DC Current Gain	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	h_{FE1}	50	70	100	
	$V_{CE} = 3\text{V}, I_C = 500\text{mA}$	h_{FE2}	18	23	50	
Diode Forward Voltage	$I_C = 1\text{A}$	V_F	--	--	1.5	V
Resistive Load Switching Time (Ratings)						
Rise Time	$V_{CC} = 5\text{V}, I_C = 0.5\text{A},$	t_r	--	--	1	μS
Storage Time		t_{STG}	2.5	3	3.5	μS
Fall Time		t_f	--	--	1.2	μS

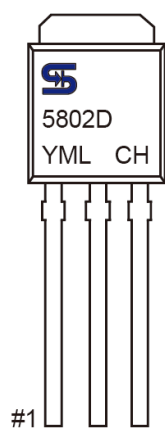
Notes: Pulsed duration = 380 μS , duty cycle $\leq 2\%$

TO-251 Mechanical Drawing



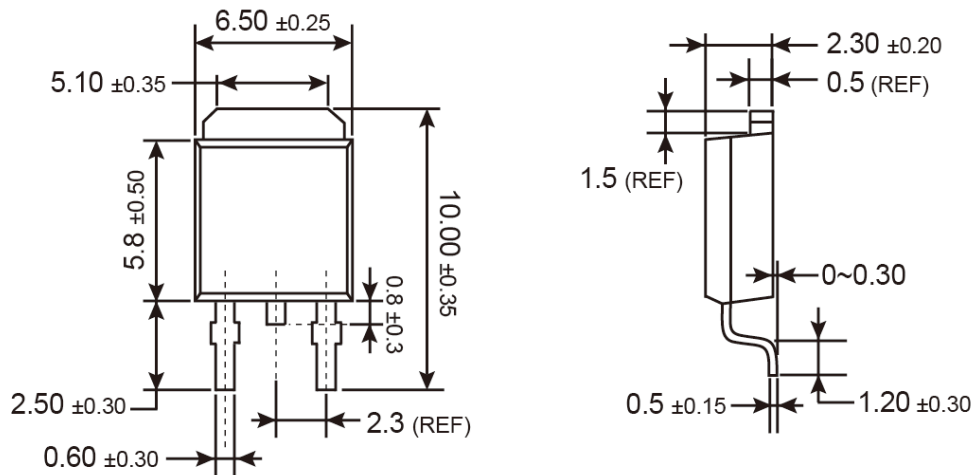
Unit: Millimeters

Marking Diagram



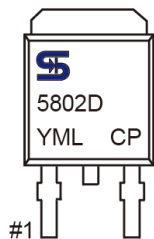
- Y** = Year Code
- M** = Month Code for Halogen Free Product
(**O**=Jan, **P**=Feb, **Q**=Mar, **R**=Apr, **S**=May, **T**=Jun, **U**=Jul, **V**=Aug, **W**=Sep, **X**=Oct, **Y**=Nov, **Z**=Dec)
- L** = Lot Code

TO-252 Mechanical Drawing



Unit: Millimeters

Marking Diagram



- Y** = Year Code
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TSC5802D

High Voltage Fast-Switching NPN Power Transistor

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