

High Voltage Fast-Switching NPN Power Transistor

FEATURES

- High Voltage Capability
- Fast Switching Speed
- Pb-free plating
- RoHS compliant
- Halogen-free mold compound

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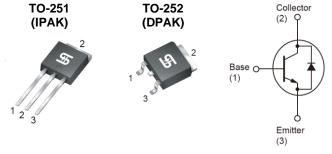
- Electronic Ballast
- Switch mode power supply

KEY PERFORMANCE PARAMETERS				
PA	RAMETER	VALUE	UNIT	
	BV_CEO	450	V	
	BV_CBO	1050	V	
	I _C	2.5	Α	
V _{CE(SAT)}	I _C =0.7A, I _B =0.14A	0.5	٧	





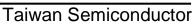




Notes: Moisture sensitivity level: level 3. Per J-STD-020

ABSOLUTE MAXIMUM RATINGS (T _A = 25°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	2.5	А	
Collector Peak Current (tp <5ms)	I _{CM}	4	А	
Base Current	I _B	1.5	А	
Base Peak Current (tp <5ms)	I _{BM}	3	Α	
Power Total Dissipation @ T _A =25°C	P _{DTOT}	30	W	
Maximum Operating Junction Temperature	TJ	+150	°C	
Storage Temperature Range	T _{STG}	-55 to +150	°C	

THERMAL PERFORMANCE					
PARAMETER	SYMBOL	LIMIT	UNIT		
Junction to Case Thermal Resistance	R _{eJC}	4.17	°C/W		
Junction to Ambient Thermal Resistance	R _{eJA}	100	°C/W		





ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Collector-Base Voltage	$I_C = 0.5 \text{mA}$	BV _{CBO}	1050			V
Collector-Emitter Breakdown Voltage	I _C =5mA	BV _{CEO}	450			V
Emitter-Base Breakdown Voltage	I _E =1mA	BV _{EBO}	15			V
Collector Cutoff Current	$V_{CE} = 400 \text{V}, I_{B} = 0$	I _{CEO}		10	250	μΑ
Collector Cutoff Current	$V_{CB} = 950 \text{V}, I_E = 0$	I _{CBO}			10	μΑ
Collector-Emitter Saturation Voltage	I_{C} =0.7A, I_{B} =0.14A	V _{CE(SAT)} 1			0.5	V
Collector-Emitter Saturation Voltage	I _C =2A, I _B =0.6A	V _{CE(SAT)} 2		1.5	3.0	V
Base-Emitter Saturation Voltage	I _C =2A, I _B =0.6A	V _{BE(SAT)} 1		1.0	1.6	V
DC Current Gain	$V_{CE} = 5V, I_{C} = 0.1A$	h _{FE} 1	50	70	100	
DC Current Gain	$V_{CE} = 3V, I_{C} = 0.5A$	h _{FE} 2	18	23	50	
Diode Forward Voltage	I _C =1A	V _F			1.5	V
Rise Time (Note 2)		t _r			1	μs
Storage Time (Note 2)	$V_{CC} = 5V, I_C = 0.5A$	t _{STG}	2.5	3	3.5	μs
Fall Time (Note 2)		t _f			1.2	μs
Repetitive Avalanche Energy	L=2mH	E _{AR}	5			mJ

Notes:

- 1. Pulse test: ≤380µs, duty cycle ≤ 2%
- 2. For DESIGN AID ONLY, not subject to production testing.





ORDERING INFORMATION

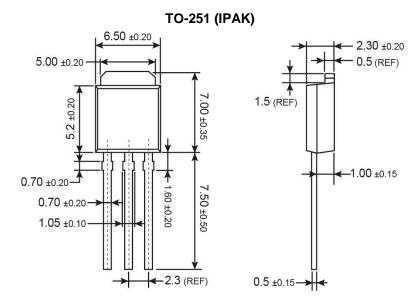
PART NO.	PACKAGE	PACKING
TSC5802DCH C5G	TO-251	75pcs / Tube
TSC5802DCP ROG	TO-252	2,500pcs / 13" Reel

Note:

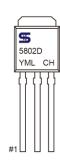
- 1. Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- 2. Halogen-free according to IEC 61249-2-21 definition



PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)



Marking Diagram



Y = Year Code

M = Month Code for Halogen Free Product

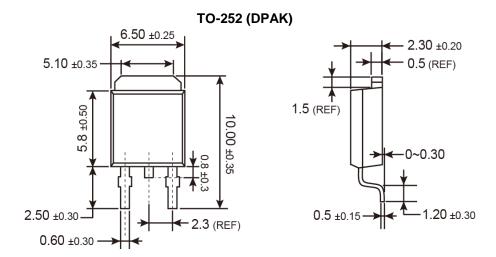
O =Jan P =Feb Q =Mar R =Apr S =May T =Jun U =Jul V =Aug

W = Sep X = Oct Y = Nov Z = Dec

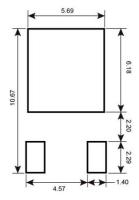
L = Lot Code (1~9, A~Z)



PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)



SUGGESTED PAD LAYOUT



MARKING DIAGRAM



Y = Year Code

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