

**TO-252
(DPAK)**

Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CBO}	50V
BV_{CEO}	50V
I_C	3A
V_{CE(SAT)}	0.5V @ I _C / I _B = 2A / 200mA

Features

- Low V_{CE(SAT)} 0.25 @ I_C / I_B = 2A / 200mA (Typ.)
- Complementary part with TSB1184CP

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSD1760CP RO	TO-252	2.5Kpcs / 13" Reel

Absolute Maximum Rating (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V _{CBO}	50	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	DC	3	A
	Pulse	7 (note 1)	
Power Dissipation	Ta=25°C	1 (note 2)	W
	Tc=25°C	15	
Operating Junction Temperature	T _J	+150	°C
Operating Junction and Storage Temperature Range	T _{STG}	- 55 to +150	°C

Note: 1. Single pulse, Pw=10mS, Duty≤2%

2. PCB 1.7mm thick, collector copper plating 10mm x 10mm or larger.

Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I _C = 50uA, I _E = 0	BV _{CBO}	50	--	--	V
Collector-Emitter Breakdown Voltage	I _C = 1mA, I _B = 0	BV _{CEO}	50	--	--	V
Emitter-Base Breakdown Voltage	I _E = 50uA, I _C = 0	BV _{EBO}	5	--	--	V
Collector Cutoff Current	V _{CB} = 30V, I _E = 0	I _{CBO}	--	--	1	uA
Emitter Cutoff Current	V _{EB} = 4V, I _C = 0	I _{EBO}	--	--	1	uA
Collector-Emitter Saturation Voltage	I _C / I _B = 2A / 200mA	*V _{CE(SAT)}	--	0.25	0.5	V
DC Current Transfer Ratio	V _{CE} = 2V, I _C = 100mA	*h _{FE}	82	--	560	
Transition Frequency	V _{CE} = 5V, I _C = 50mA, f = 100MHz	f _T	--	90	--	MHz
Output Capacitance	V _{CB} = 10V, f = 1MHz	Cob	--	45	--	pF

* Pulse Test: Pulse Width ≤380uS, Duty Cycle≤2%

Electrical Characteristics Curve (Ta = 25°C, unless otherwise noted)

Figure 1. DC Current Gain

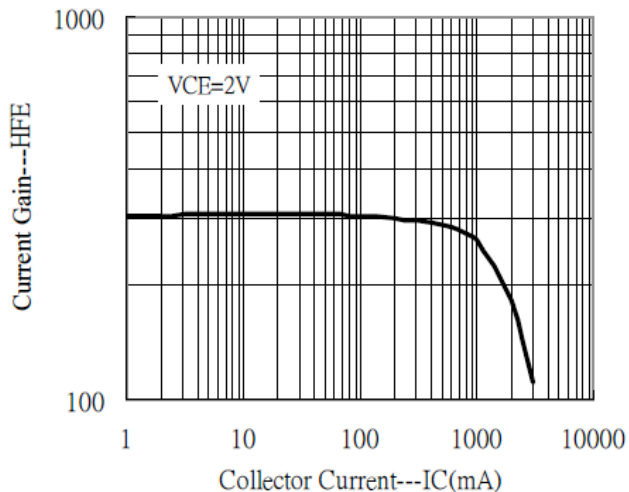


Figure 2. VCE(SAT) v.s. IC

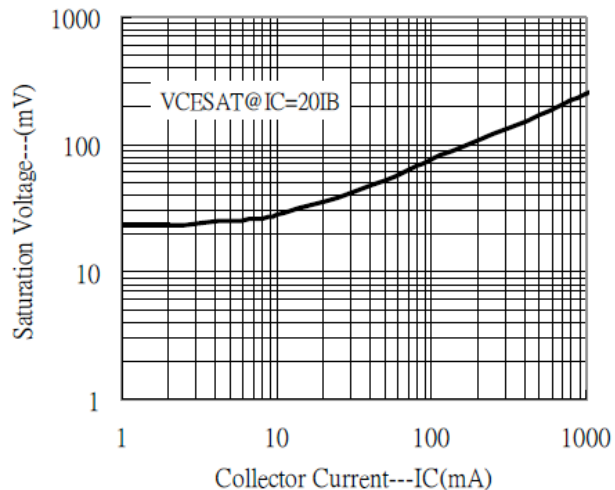


Figure 3. VBE(SAT) v.s. IC

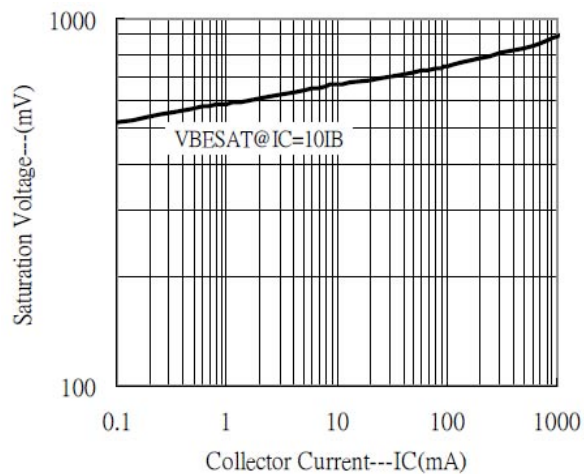
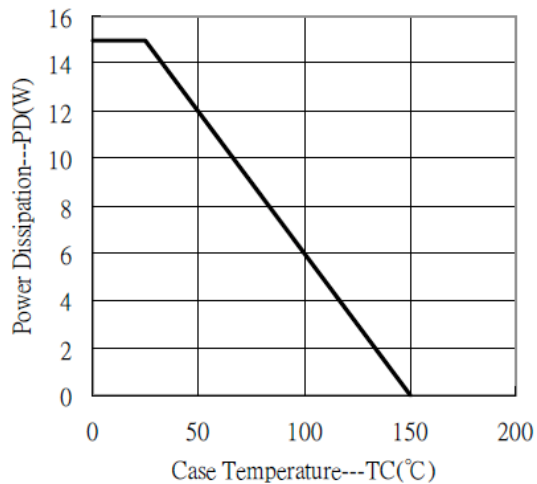
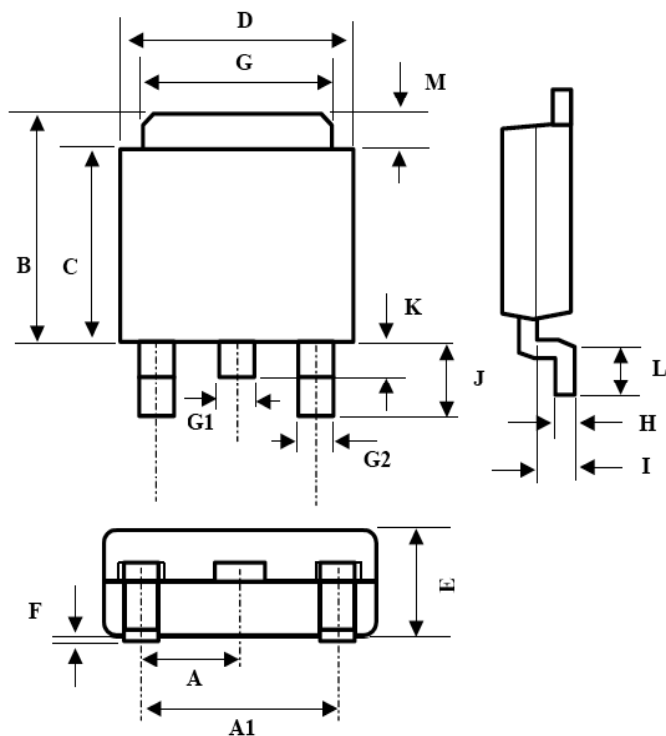


Figure 4. Power Derating Curve



TO-252 Mechanical Drawing



TO-252 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.3BSC		0.09BSC	
A1	4.6BSC		0.18BSC	
B	6.80	7.20	0.268	0.283
C	5.40	5.60	0.213	0.220
D	6.40	6.65	0.252	0.262
E	2.20	2.40	0.087	0.094
F	0.00	0.20	0.000	0.008
G	5.20	5.40	0.205	0.213
G1	0.75	0.85	0.030	0.033
G2	0.55	0.65	0.022	0.026
H	0.35	0.65	0.014	0.026
I	0.90	1.50	0.035	0.059
J	2.20	2.80	0.087	0.110
K	0.50	1.10	0.020	0.043
L	0.90	1.50	0.035	0.059
M	1.30	1.70	0.051	0.67

TSD1760

Low Vcesat NPN Transistor

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