



**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	$I_C$	DC	3
		Pulse	7 (note 1)
Power Dissipation	$P_D$	Ta=25°C	1 (note 2)
		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.

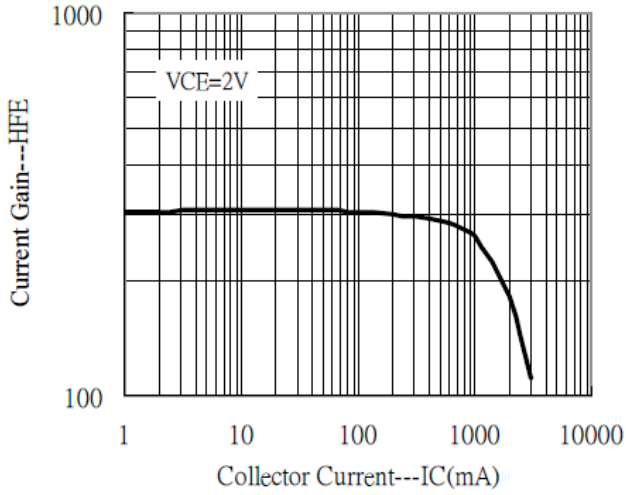
### Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = 50\mu A, I_E = 0$	$BV_{CBO}$	50	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 1mA, I_B = 0$	$BV_{CEO}$	50	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 50\mu A, I_C = 0$	$BV_{EBO}$	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	$V_{CB} = 10V, f = 1MHz$	$C_{ob}$	--	45	--	pF

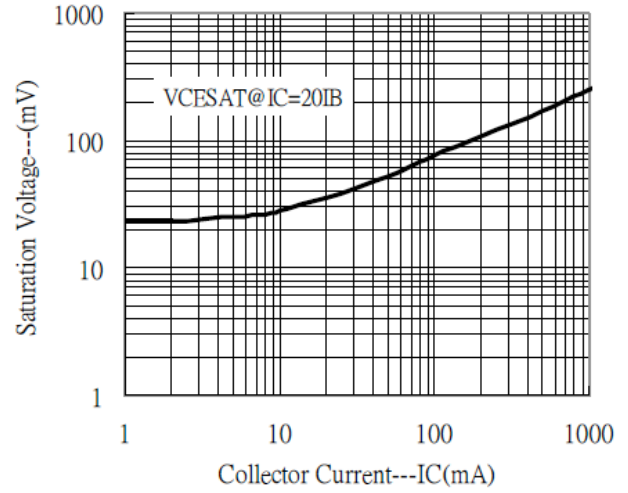
\* Pulse Test: Pulse Width ≤380uS, Duty Cycle≤2%

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

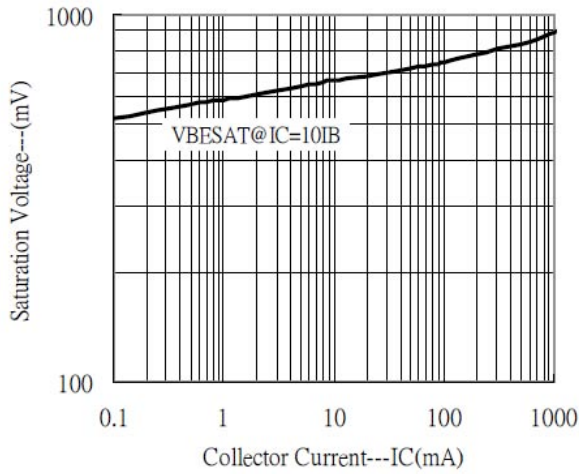
**Figure 1. DC Current Gain**



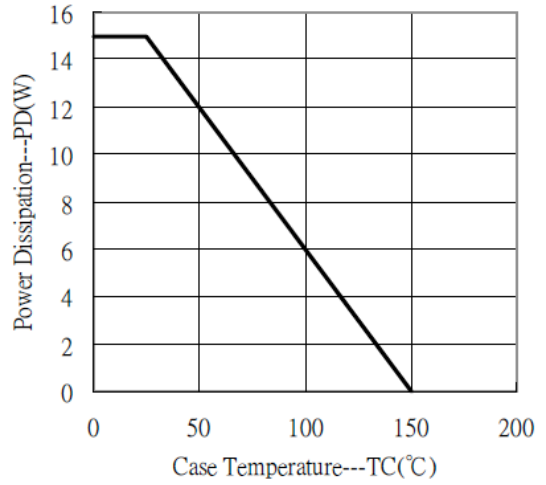
**Figure 2. VCE(SAT) v.s. IC**



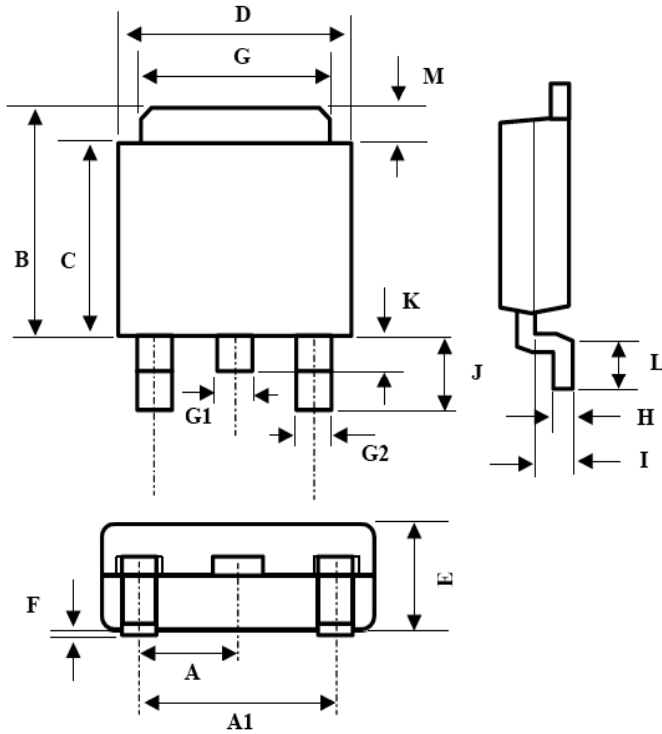
**Figure 3. VBE(SAT) v.s. IC**



**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

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