



Pin Definition:

1. Emitter
2. Collector
3. Base

PRODUCT SUMMARY

BV_{CBO}	60V
BV_{CEO}	30V
I_C	3A
$V_{CE(SAT)}$	0.5V @ $I_C=2A, I_B=200mA$

Features

- Low $V_{CE(SAT)}$ 0.3 @ $I_C=2A, I_B=200mA$ (Typ.)
- Complementary part with TSB772

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSD882CK B0	TO-126	200pcs / Bulk
TSD882CK B0G	TO-126	200pcs / Bulk

Note: "G" denote for Halogen Free Product

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	DC	3
		Pulse	7 (note)
Collector Power Dissipation	P_D	$T_A=25^\circ C$	1
		$T_C=25^\circ C$	10
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ C$

Note: Single pulse, $P_w \leq 350\mu s$, Duty $\leq 2\%$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C=50\mu A, I_E=0$	BV_{CBO}	60	--	--	V
Collector-Emitter Breakdown Voltage	$I_C=1mA, I_B=0$	BV_{CEO}	30	--	--	V
Emitter-Base Breakdown Voltage	$I_E=50\mu A, I_C=0$	BV_{EBO}	6	--	--	V
Collector Cutoff Current	$V_{CB}=60V, I_E=0$	I_{CBO}	--	--	100	nA
Emitter Cutoff Current	$V_{EB}=6V, I_C=0$	I_{EBO}	--	--	100	nA
Collector-Emitter Saturation Voltage	$I_C=2A, I_B=200mA$	$*V_{CE(SAT)}$	--	0.3	0.5	V
Base-Emitter Saturation Voltage	$I_C=2A, I_B=200mA$	$*V_{BE(SAT)}$	--	--	1.5	V
DC Current Transfer Ratio	$V_{CE}=2V, I_C=20A$	$*h_{FE1}$	160	--	--	
	$V_{CE}=2V, I_C=500mA$	$*h_{FE2}$	180	--	390	
	$V_{CE}=2V, I_C=1A$	$*h_{FE3}$	150	--	--	
Transition Frequency	$V_{CE}=5V, I_C=500mA, f=100MHz$	f_T	--	270	--	MHz
Output Capacitance	$V_{CB}=10V, f=1MHz$	C_{ob}	--	16	--	pF

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

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

Figure 1. IC vs. VCE

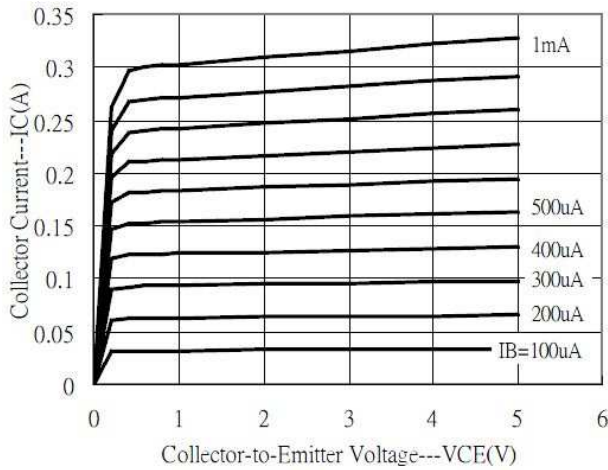


Figure 2. IC vs. VCE

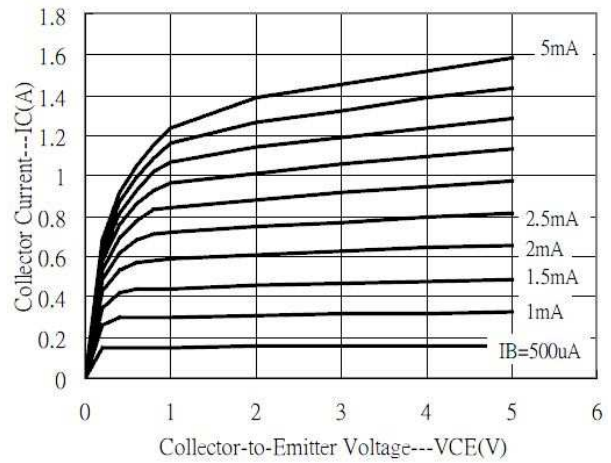


Figure 3. IC vs. VCE

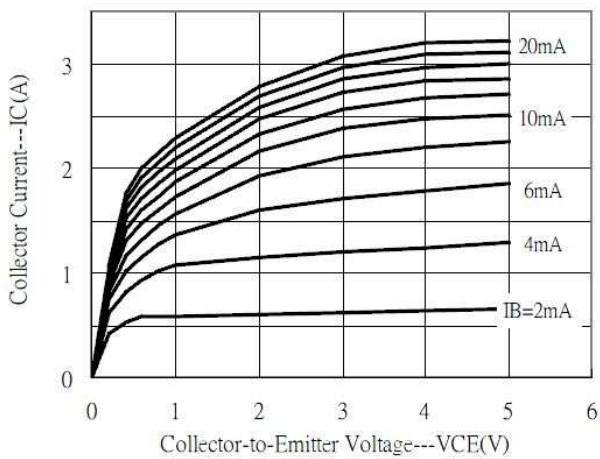


Figure 4. IC vs. VCE

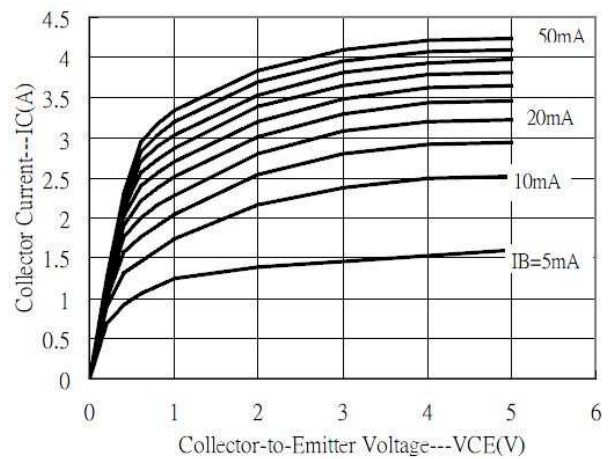


Figure 5. DC Current Gain

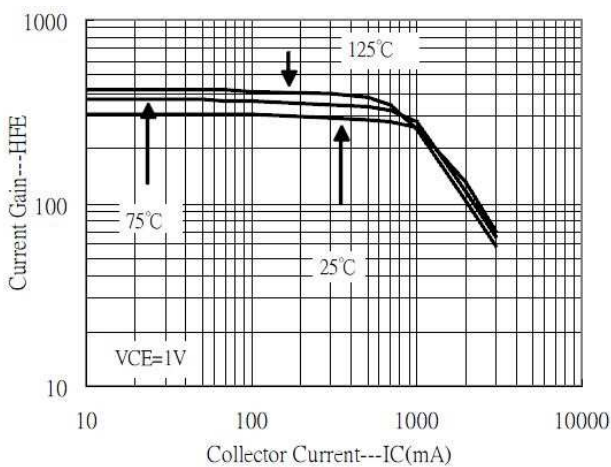
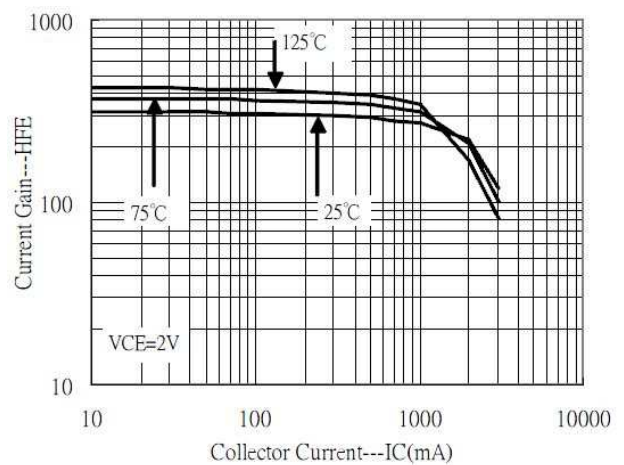


Figure 6. DC Current Gain



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

Figure 7. DC Current Gain

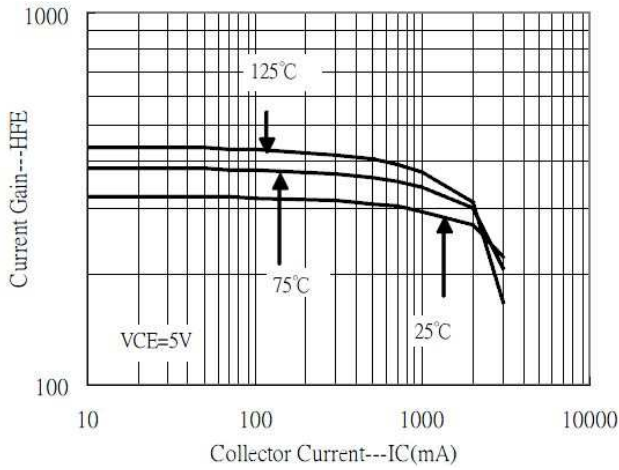


Figure 8. VCE(SAT) vs. IC

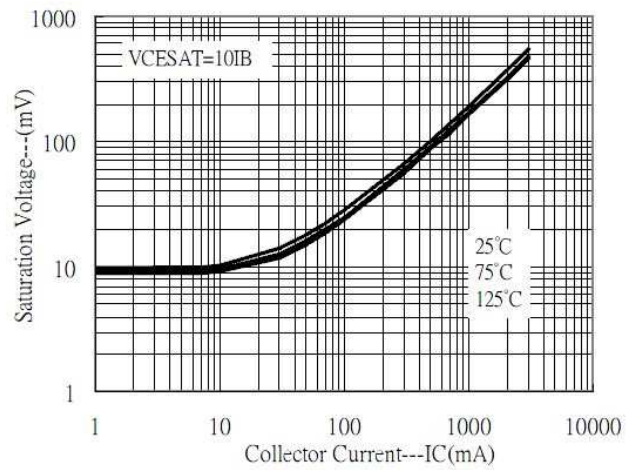


Figure 9. VCE(SAT) vs. IC

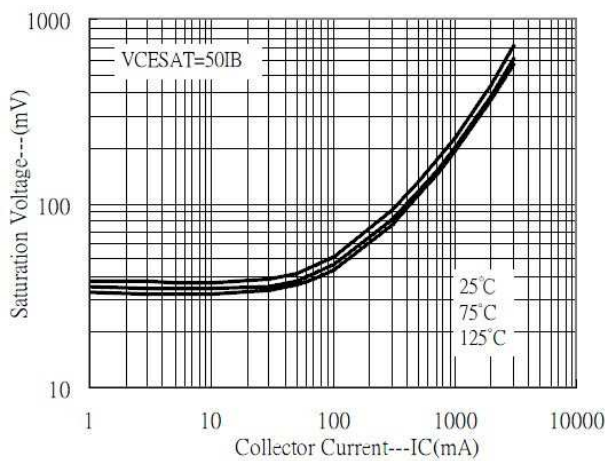


Figure 10. VCE(SAT) vs. IC

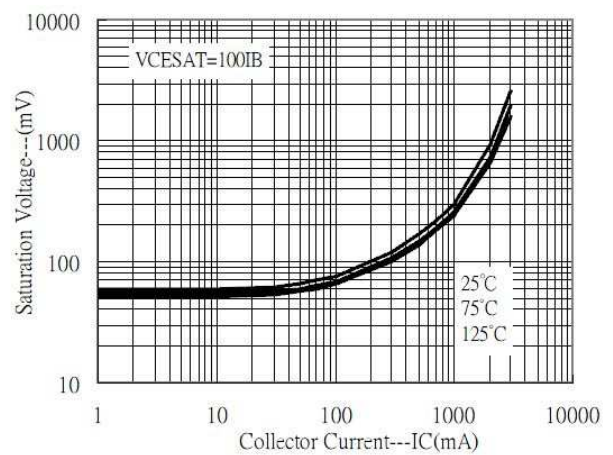


Figure 11. VBE(SAT) vs. IC

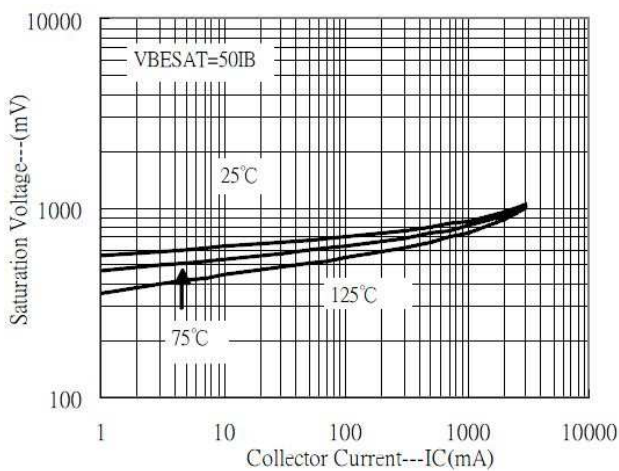
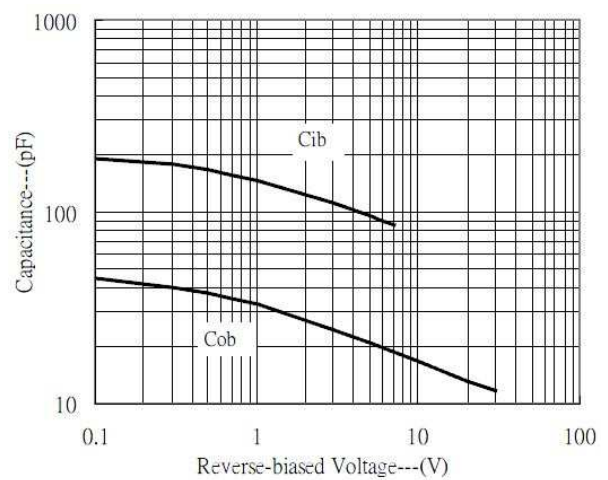


Figure 12. Capacitance vs. Reverse Bias Voltage



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

Figure 13. Cutoff Frequency vs. IC

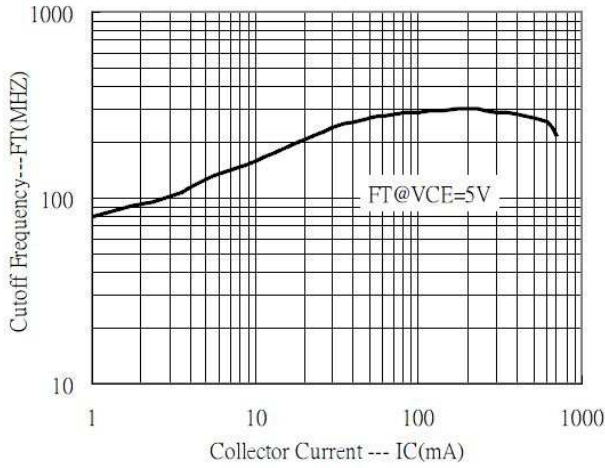


Figure 14. On Voltage vs. IC

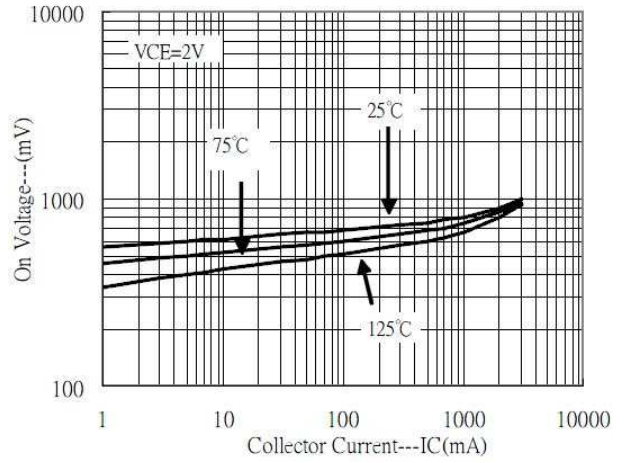


Figure 15. Power Derating Curve

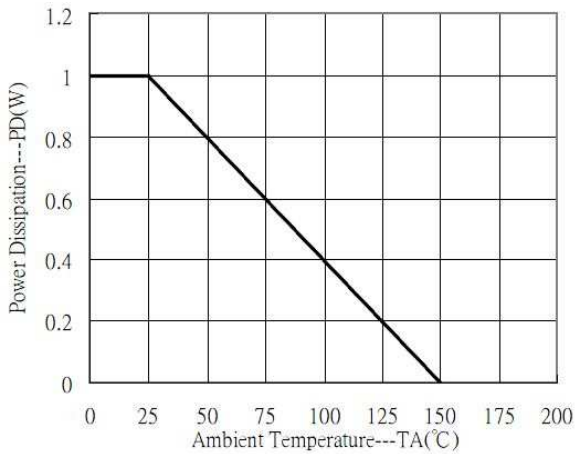
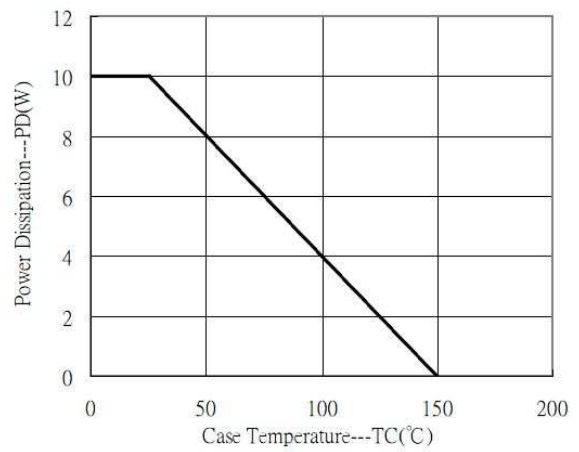
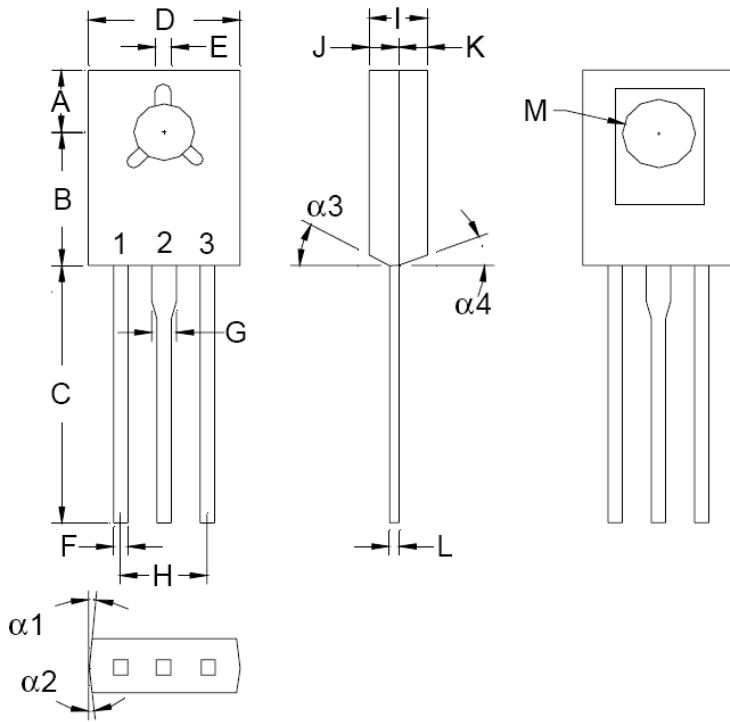


Figure 16. Power Derating Curve



TO-18 Mechanical Drawing



TO-18 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
$\alpha 1$	--	3°	--	3°
$\alpha 2$	--	3°	--	3°
$\alpha 3$	--	3°	--	3°
$\alpha 4$	--	3°	--	3°
A	0.150	0.153	3.81	3.91
B	0.275	0.279	6.99	7.09
C	0.531	0.610	13.50	15.50
D	0.285	0.303	7.52	7.72
E	0.034	0.041	0.95	1.05
F	0.028	0.031	0.71	0.81
G	0.048	0.052	1.22	1.32
H	0.170	0.189	4.34	4.80
I	0.095	0.105	2.41	2.66
J	0.045	0.055	1.14	1.39
K	0.045	0.055	1.14	1.39
L	--	0.021	--	0.55
M	0.137	0.152	3.50	3.86

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