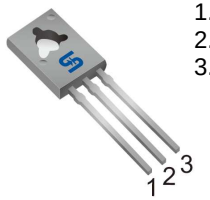
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSD882

Low Vcesat NPN Transistor

TO-126



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°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	DC	I_C	3	A
	Pulse		7 (note)	
Collector Power Dissipation	T_A=25°C	P_D	1	W
	T_C=25°C		10	
Operating Junction Temperature		T_J	+150	°C
Operating Junction and Storage Temperature Range		T_{STG}	- 55 to +150	°C

Note: Single pulse, Pw≤350us, Duty≤2%

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I_C =50uA, 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 =50uA, 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
	V_{CE} =2V, I_C =20A	*h_{FE} 1	160	--	--	
DC Current Transfer Ratio	V_{CE} =2V, I_C =500mA	*h_{FE} 2	180	--	390	
	V_{CE} =2V, I_C =1A	*h_{FE} 3	150	--	--	
Transition Frequency	V_{CE} =5V, I_C=500mA, f=100MHz	f_T	--	270	--	MHz
Output Capacitance	V_{CB} = 10V, f=1MHz	Cob	--	16	--	pF

* Pulse Test: Pulse Width ≤300uS, Duty Cycle≤2%

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

Figure 1. IC vs. VCE

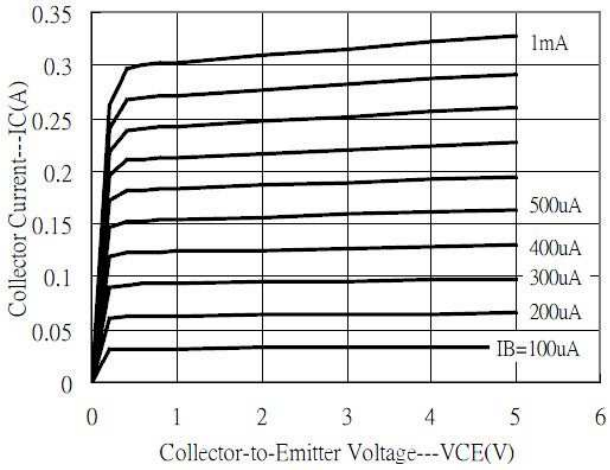


Figure 2. IC vs. VCE

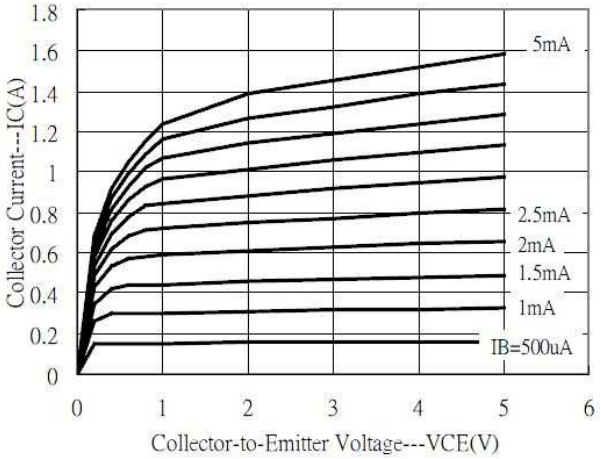


Figure 3. IC vs. VCE

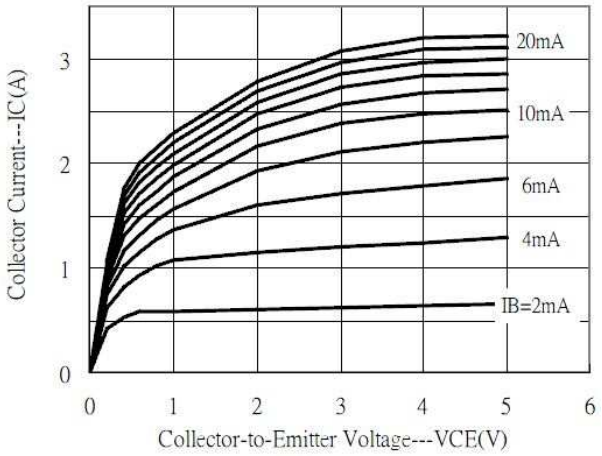


Figure 4. IC vs. VCE

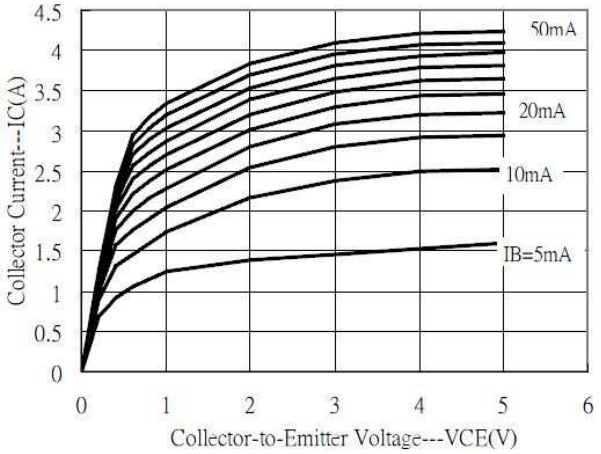


Figure 5. DC Current Gain

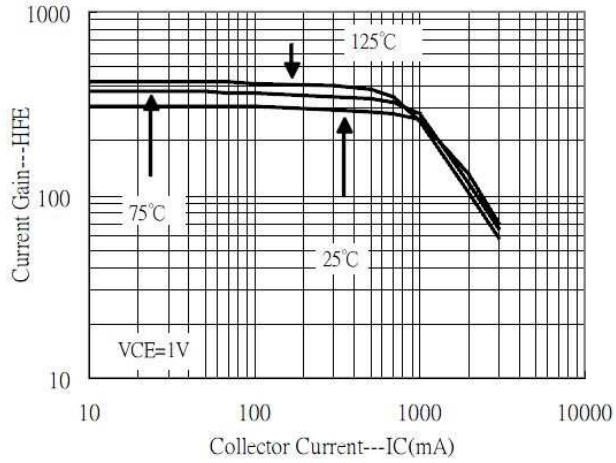
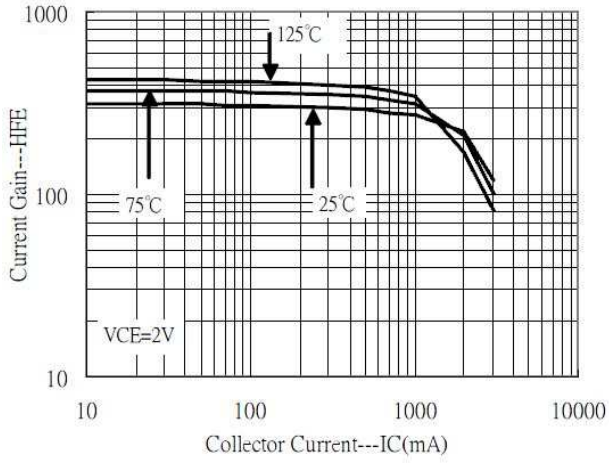


Figure 6. DC Current Gain



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

Figure 7. DC Current Gain

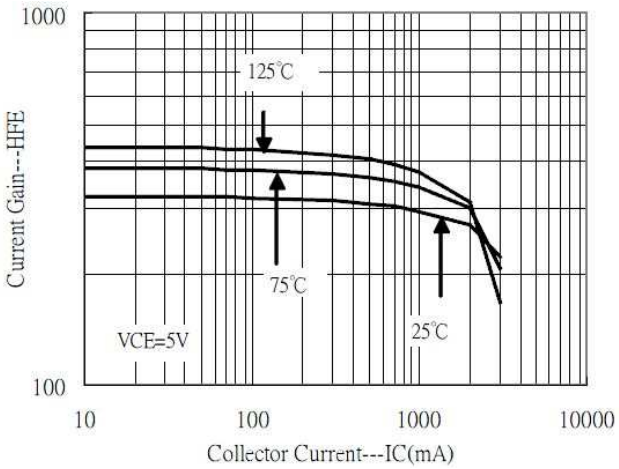


Figure 8. $V_{CE(SAT)}$ vs. IC

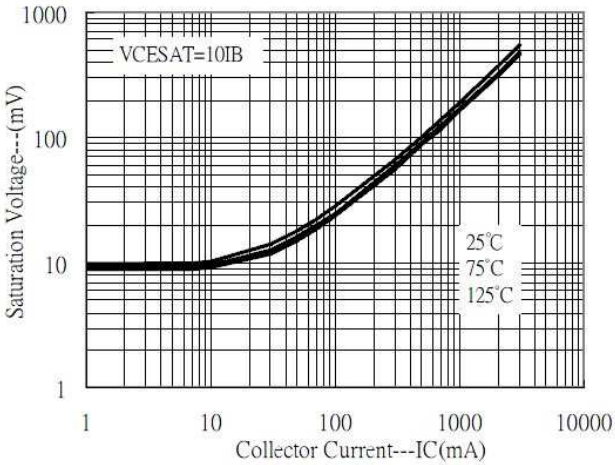


Figure 9. $V_{CE(SAT)}$ vs. IC

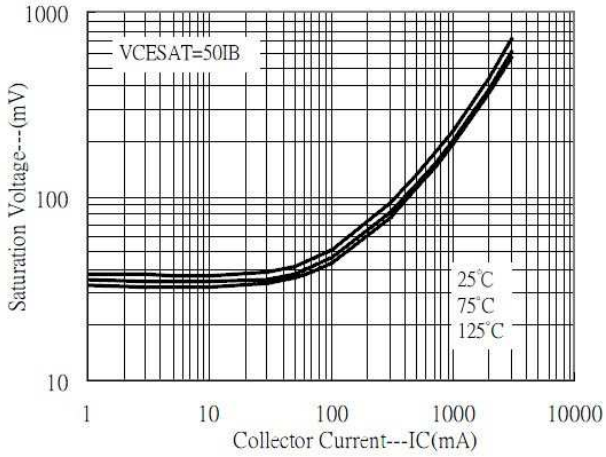


Figure 10. $V_{CE(SAT)}$ vs. IC

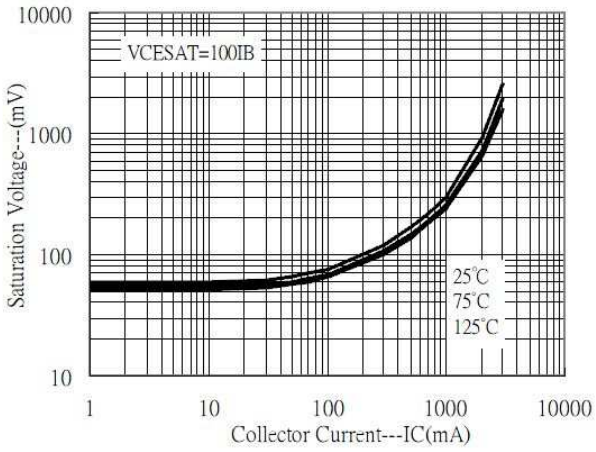


Figure 11. $V_{BE(SAT)}$ vs. IC

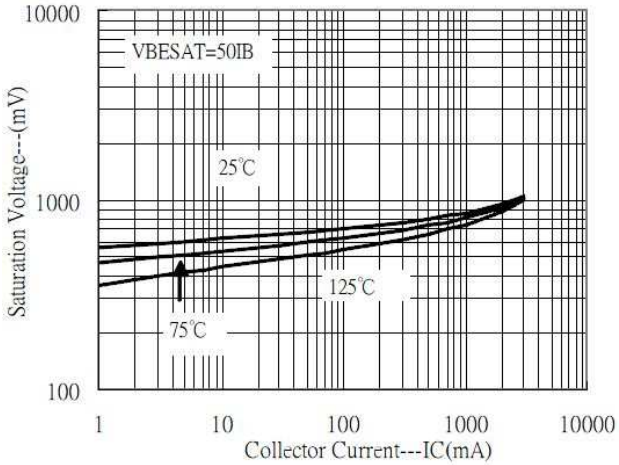
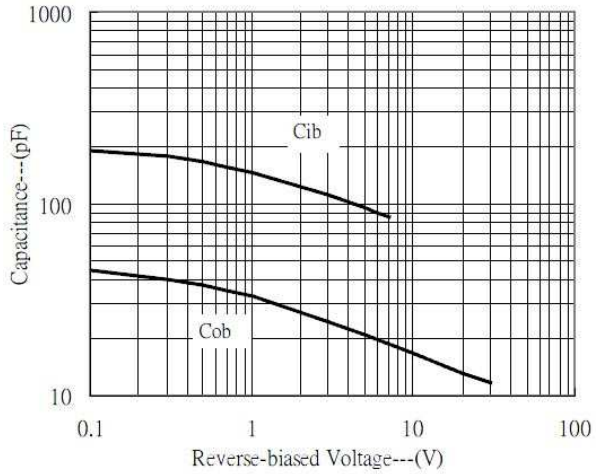


Figure 12. Capacitance vs. Reverse Bias Voltage



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

Figure 13. Cutoff Frequency vs. IC

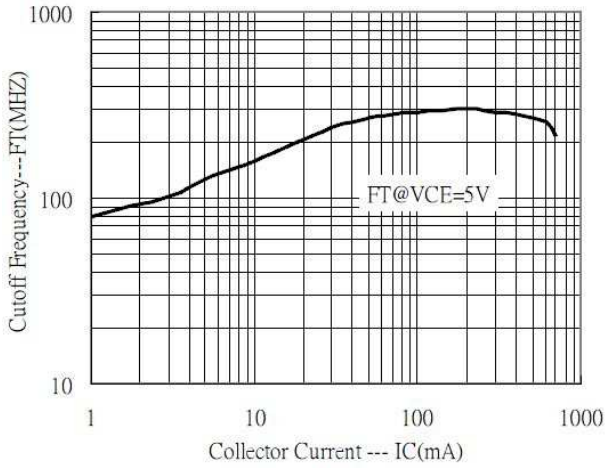


Figure 14. On Voltage vs. IC

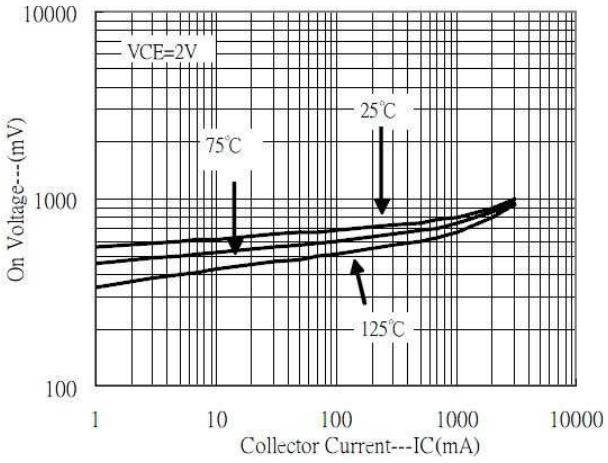


Figure 15. Power Derating Curve

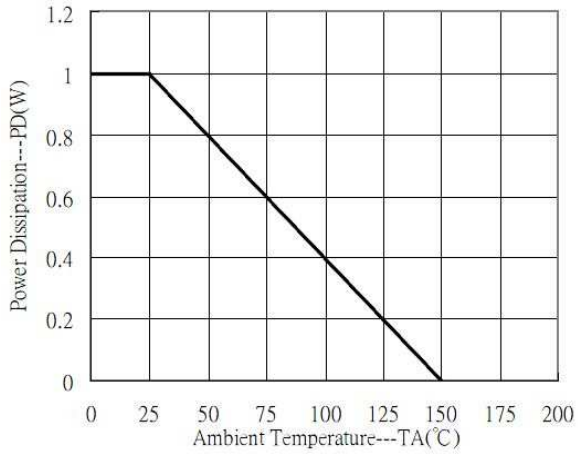
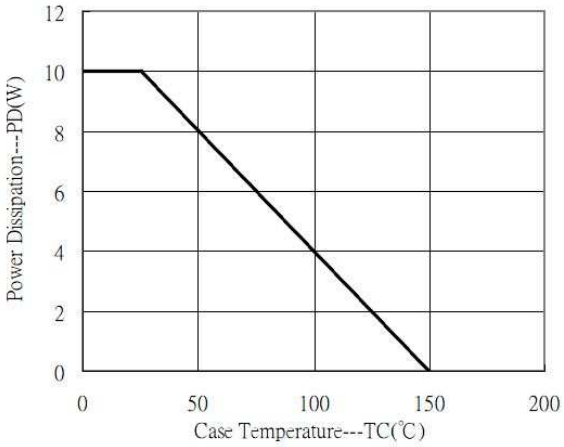


Figure 16. Power Derating Curve



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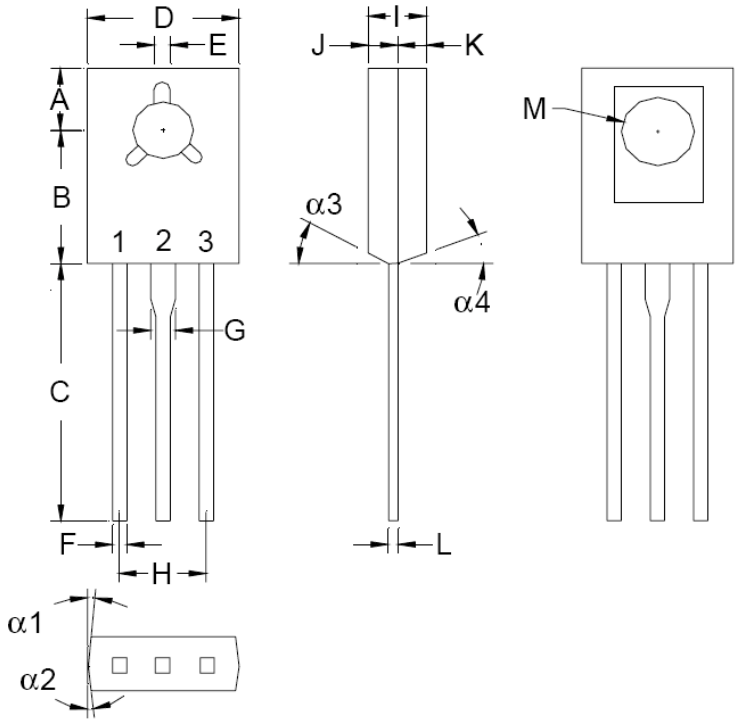
TO-126 Mechanical Drawing



TO-126 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
∝1	--	3ºC	--	3ºC
∝2	--	3ºC	--	3ºC
∝3	--	3ºC	--	3ºC
∝4	--	3ºC	--	3ºC
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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