TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSD882S

Low Vcesat NPN Transistor

TO-92

Pin Definition:
1. Emitter
2. Collector
3. Base

SOT-89

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1. Base
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3. Emitter

PRODUCT SUMMARY

BV_{CBO}	60V
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 TSB772S

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSD882SCT B0	TO-92	1Kpcs / Bulk
TSD882SCT A3	TO-92	2Kpcs / Ammo
TSD882SCY RM	SOT-89	1Kpcs / 7” Reel

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

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	3	A
	Pulse		7 (note)	
Collector Power Dissipation	SOT-89	P_D	0.75	W
	TO-92		0.625	
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 (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}	60	--	--	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} = 50V, I_E = 0	I_{CBO}	--	--	1	uA
Emitter Cutoff Current	V_{EB} = 3V, 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
Base-Emitter Saturation Voltage	I_C / I_B = 2A / 200mA	*$V_{BE(SAT)}$	--	--	2	V
DC Current Transfer Ratio	V_{CE} = 2V, I_C = 1A	*h_{FE}	100	--	500	
Transition Frequency	V_{CE} =6V, 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%

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

Figure 1. DC Current Gain

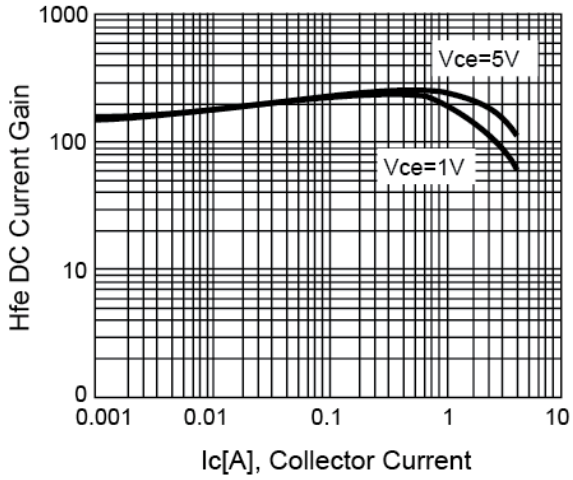


Figure 2. $V_{CE(SAT)}$ v.s. Ic

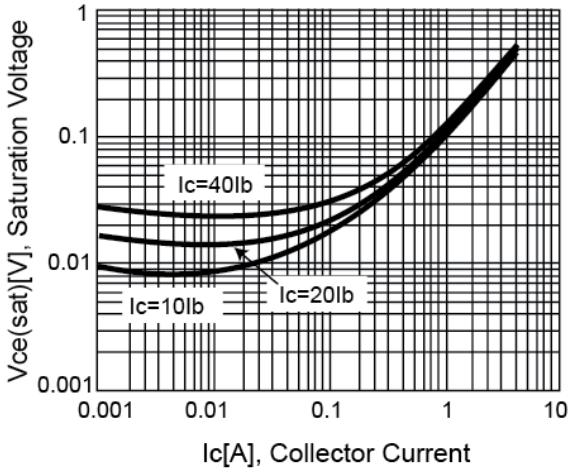


Figure 3. $V_{BE(SAT)}$ v.s. Ic

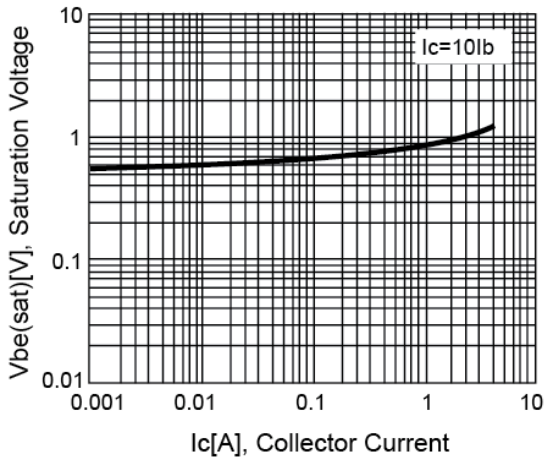
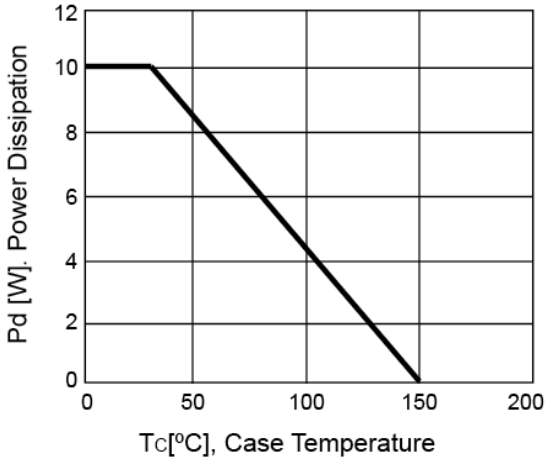
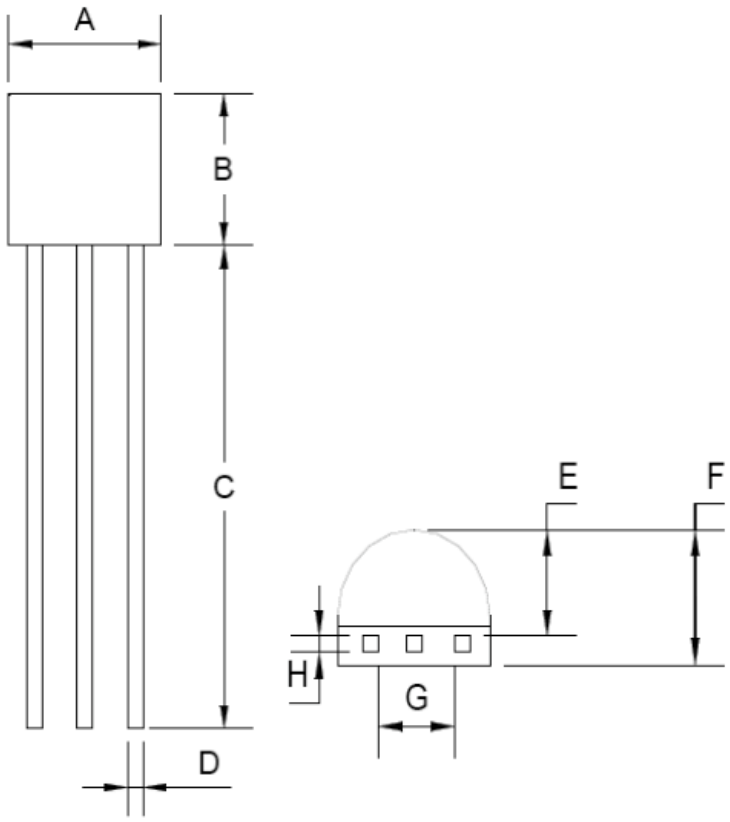


Figure 4. Power Derating Curve

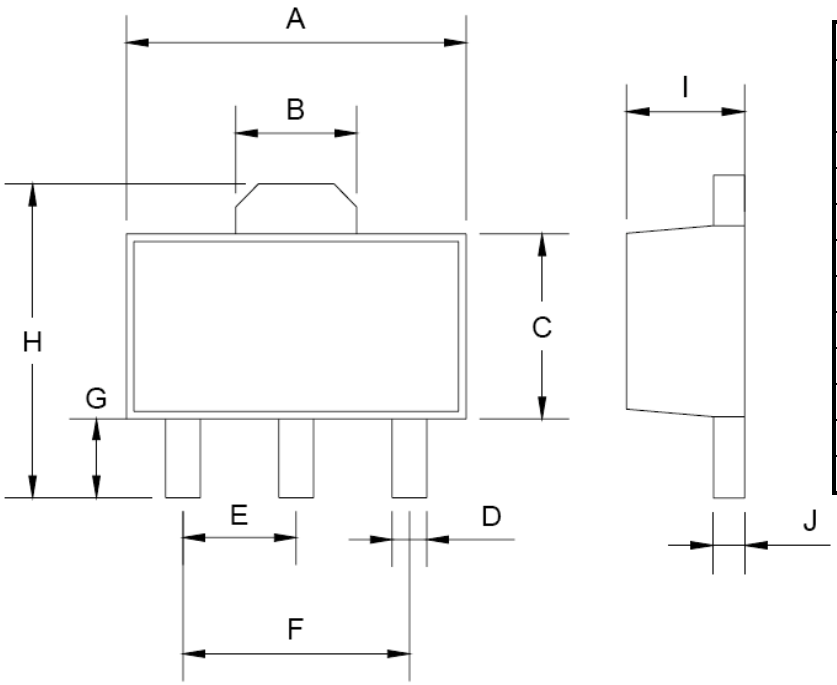


TO-92 Mechanical Drawing



TO-92 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.30	4.70	0.169	0.185
B	4.30	4.70	0.169	0.185
C	14.30(typ)		0.563(typ)	
D	0.43	0.49	0.017	0.019
E	2.19	2.81	0.086	0.111
F	3.30	3.70	0.130	0.146
G	2.42	2.66	0.095	0.105
H	0.37	0.43	0.015	0.017

SOT-89 Mechanical Drawing



SOT-89 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.40	4.60	0.173	0.181
B	1.50	1.7	0.059	0.070
C	2.30	2.60	0.090	0.102
D	0.40	0.52	0.016	0.020
E	1.50	1.50	0.059	0.059
F	3.00	3.00	0.118	0.118
G	0.89	1.20	0.035	0.047
H	4.05	4.25	0.159	0.167
I	1.4	1.6	0.055	0.068
J	0.35	0.44	0.014	0.017

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