

SOT-89

Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CEO}	32V
BV_{CBO}	40V
I_C	1A
V_{CE(SAT)}	0.15V @ I _C / I _B = 500mA / 50mA

Features

- Low V_{CE(SAT)} 0.15V @ I_C / I_B = 500mA / 50mA (Typ.)
- Complementary part with TSB1132

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSD1664CY RM	SOT-89	1Kpcs / 7" Reel
TSD1664CY RMG	SOT-89	1Kpcs / 7" Reel

Note: "G" denote for Halogen Free Product

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	32	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	1	A
		2 (note1)	
Collector Power Dissipation	P _D	0.5	W
		2 (note 2)	
Operating Junction Temperature	T _J	+150	°C
Operating Junction and Storage Temperature Range	T _{STG}	- 55 to +150	°C

Note: 1. Single pulse, Pw=20ms, Duty≤50%

2. When mounted on a 40 x 50 x 0.7mm ceramic board.

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}	40	--	--	V
Collector-Emitter Breakdown Voltage	I _C = 1mA, I _B = 0	BV _{CEO}	32	--	--	V
Emitter-Base Breakdown Voltage	I _E = 50uA, I _C = 0	BV _{EBO}	5	--	--	V
Collector Cutoff Current	V _{CB} = 20V, I _E = 0	I _{CBO}	--	--	0.5	uA
Emitter Cutoff Current	V _{EB} = 4V, I _C = 0	I _{EBO}	--	--	0.5	uA
Collector-Emitter Saturation Voltage	I _C / I _B = 500mA / 50mA	V _{CE(SAT)}	--	0.15	0.4	V
DC Current Transfer Ratio	V _{CE} = 3V, I _C = 100mA	h _{FE}	120	--	390	
Transition Frequency	V _{CE} = 5V, I _C = -50mA, f = 100MHz	f _T	50	150	--	MHz
Output Capacitance	V _{CB} = 10V, I _E = 0, f = 1MHz	Cob	--	10	20	pF

h_{FE} values are classified as follows:

Rank	Q	R
h _{FE}	120~270	180~390

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

Figure 1. DC Current Gain

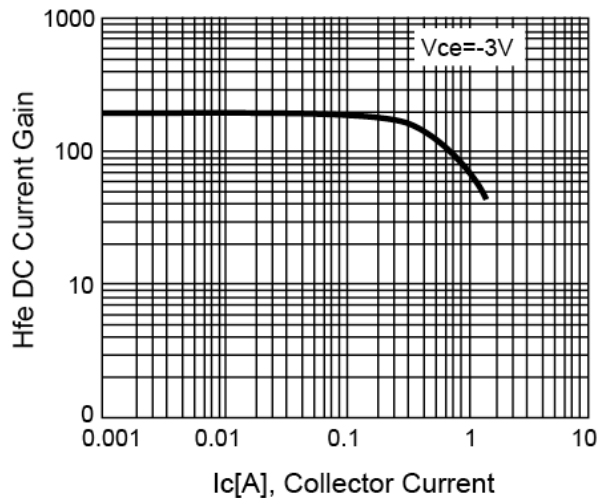


Figure 2. $V_{CE(SAT)}$ V.s. I_c

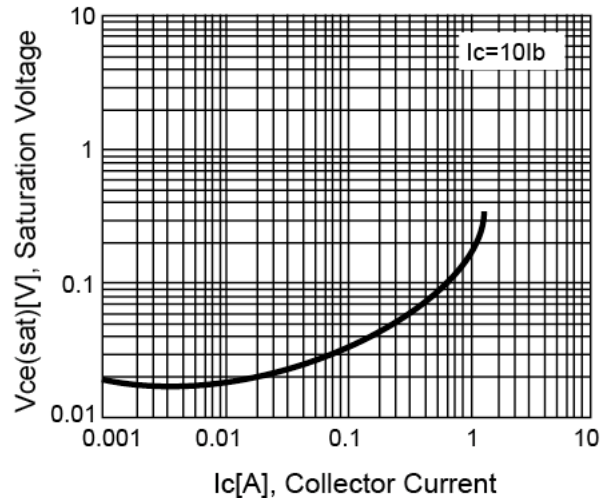


Figure 3. Transition Frequency v.s. I_E

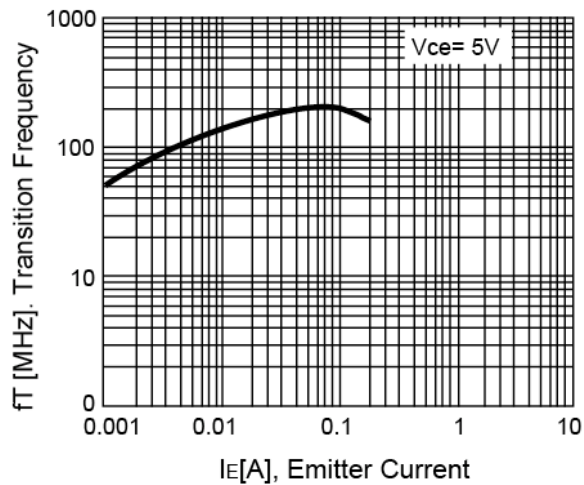
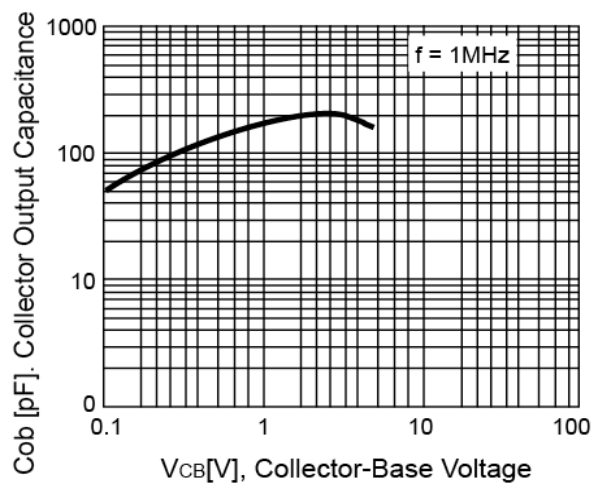
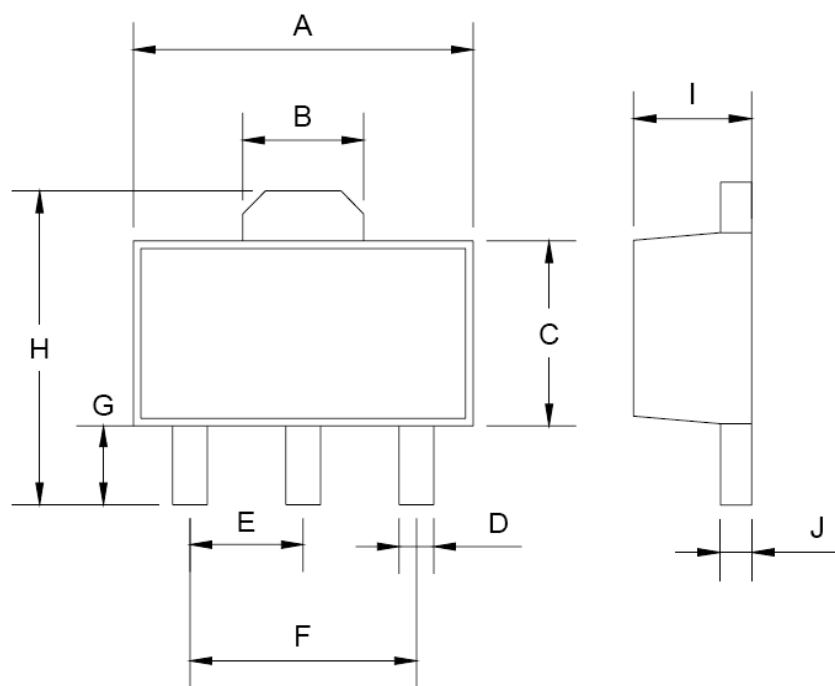


Figure 4. Collector Output Capacitance vs. V_{cb}

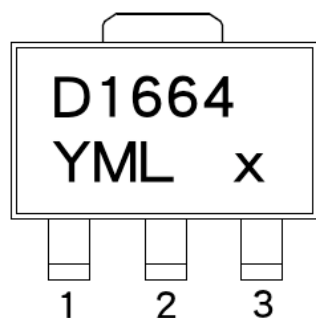


SOT-89 Mechanical Drawing



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

Marking Diagram



Y = Year Code

M = Month Code

(A=Jan, B=Feb, C=Mar, D=Apl, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)

= Month Code for Halogen Free Product

(O=Jan, P=Feb, Q=Mar, R=Apl, S=May, T=Jun, U=Jul, V=Aug, W=Sep, X=Oct, Y=Nov, Z=Dec)

L = Lot Code

X = hFE rank code

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