TSB1424A

Low Vce(sat) PNP Transistor

SOT-89

SOT-223

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

BV_{CEO} = - 50V
Ic = - 3A
$V_{CE\ (SAT)}$, = - 0.35V(typ.) @Ic / Ib = - 2A / - 0.1A

Features

- Low $V_{CE\ (SAT)}$.
- Excellent DC current gain characteristics

Structure

- Epitaxial planar type.
- Complementary to TSD2150A

Ordering Information

Part No.	Packing	Package	Marking
TSB1424ACW	2.5k per reel	SOT-223	**AE**
TSB1424ACY	1k per reel	SOT-89	**AE**

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

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	- 50V	V
Collector-Emitter Voltage		V_{CEO}	- 50V	V
Emitter-Base Voltage		V_{EBO}	- 6	V
Collector Current	DC	I_C	- 3	A
	Pulse		- 5	
Collector Power Dissipation	SOT-89	P_D	0.5	W
	SOT-223		1.5	
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 <= 30%

Electrical Characteristics

Ta = 25 °C unless otherwise noted

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	I_C = - 50uA	BV_{CBO}	- 50	--	--	V
Collector-Emitter Breakdown Voltage	I_C = - 1mA	BV_{CEO}	- 50	--	--	V
Emitter-Base Breakdown Voltage	I_E = - 50uA	BV_{EBO}	- 6	--	--	V
Collector Cutoff Current	V_{CB} = - 20V	I_{CBO}	--	--	- 0.1	uA
Emitter Cutoff Current	V_{EB} = - 5V	I_{EBO}	--	--	-0.1	uA
Collector-Emitter Saturation Voltage	I_C / I_B = - 2A / - 0.1A	$V_{CE(SAT)}$	--	-0.35	- 0.5	V
DC Current Transfer Ratio	V_{CE} = 2V, I_C = 100mA	h_{FE}	180	--	--	
	V_{CE} = 2V, I_C = 1A	h_{FE}	180	--	560	
	V_{CE} = 2V, I_C = 2A	h_{FE}	180	--	--	
Transition Frequency	V_{CE} = - 2V, I_C = - 500mA, f = 100MHz	f_T	--	240	--	MHz
Output Capacitance	V_{CB} = - 10V, f=1MHz	Cob	--	35	--	pF

Note : pulse test: pulse width <=380uS, duty cycle <=2%

Electrical Characteristics Curve

Figure 1. Current Gain vs Collector Current

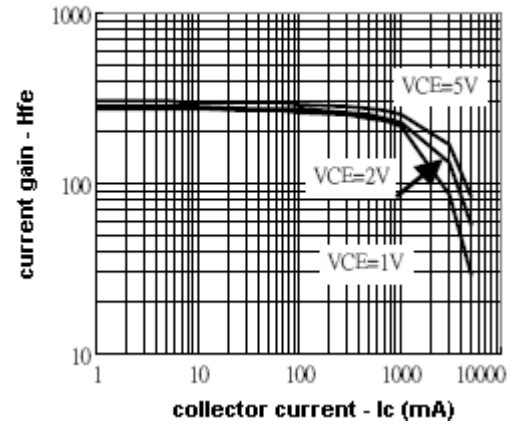


Figure 2. Saturation Voltage vs Collector Current

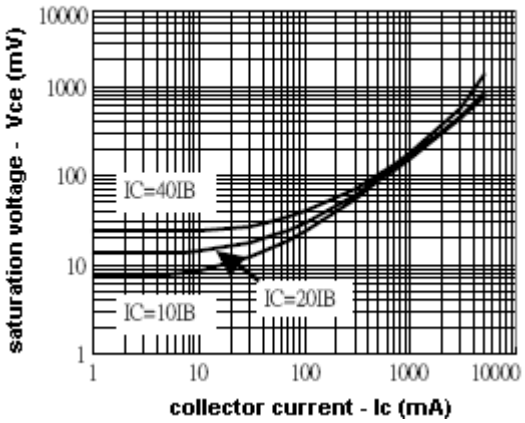


Figure 3. Saturation Voltage vs Collector Current

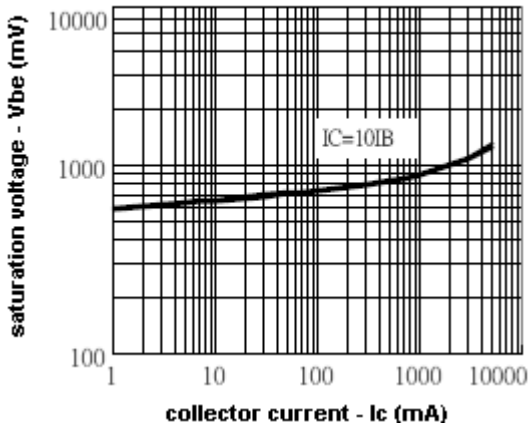
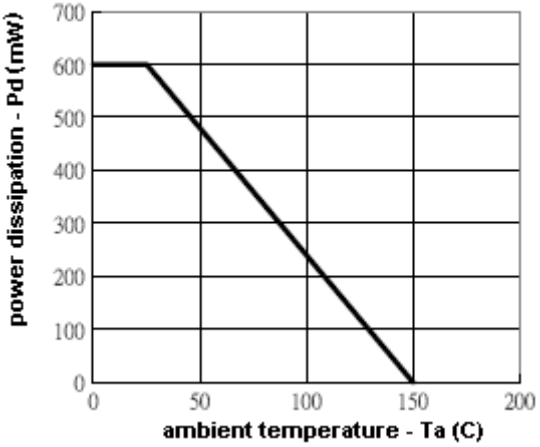
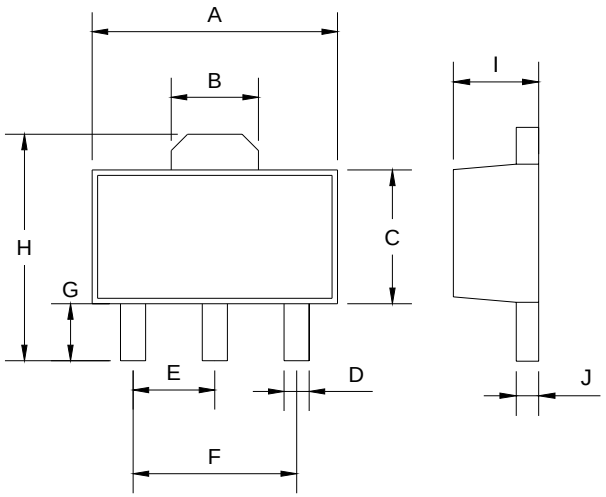


Figure 4. Power Derating Curves

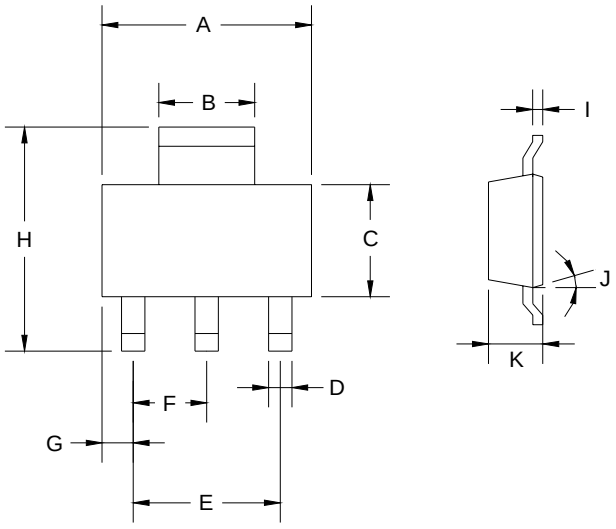


SOT-89 Mechanical Drawing



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

SOT-223 Mechanical Drawing



SOT-223 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.350	6.850	0.250	0.270
B	2.900	3.100	0.114	0.122
C	3.450	3.750	0.136	0.148
D	0.595	0.635	0.023	0.025
E	4.550	4.650	0.179	0.183
F	2.250	2.350	0.088	0.093
G	0.835	1.035	0.032	0.041
H	6.700	7.300	0.263	0.287
I	0.250	0.355	0.010	0.014
J	10°	16°	10°	16°
K	1.550	1.800	0.061	0.071