



TSD1760

Low Vce(sat) NPN Transistor

TO-252



Pin assignment:

1. Base
2. Collector
3. Emitter

$BV_{CEO} = 30V$

$I_C = 3A$

$V_{CE(SAT)} = 0.25V(typ.) @ I_C / I_B = 2A / 0.2A$

Features

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

Structure

- ✧ Epitaxial planar type.
- ✧ Complementary to TSB1184

Ordering Information

Part No.	Packing	Package
TSD1760CP	Tape & Reel	TO-252

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	40V	V
Collector-Emitter Voltage	V_{CEO}	30V	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	DC	3	A
	Pulse	7 (note 1)	
Collector Power Dissipation	P_D	1.0	W
Operating Junction Temperature	T_J	+150	°C
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	°C

Note: 1. Single pulse, $P_w = 2mS$

Electrical Characteristics

Ta = 25 °C unless otherwise noted

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	$I_C = 50\mu A, I_E = 0$	BV_{CBO}	40	--	--	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}	5	--	--	V
Collector Cutoff Current	$V_{CB} = 40V, I_E = 0$	I_{CBO}	--	--	1	μA
Emitter Cutoff Current	$V_{EB} = 4V, I_C = 0$	I_{EBO}	--	--	1	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = 2.0A / 0.2A$	$V_{CE(SAT)}$	--	0.25	0.5	V
DC Current Transfer Ratio	$V_{CE} = 2V, I_C = 1A$	h_{FE}	120	--	560	
Transition Frequency	$V_{CE} = 5V, I_C = 100mA, f = 100MHz$	f_T	--	90	--	MHz
Output Capacitance	$V_{CB} = 10V, f = 1MHz$	C_{ob}		45	--	pF

Note : pulse test: pulse width $\leq 380\mu S$, duty cycle $\leq 2\%$

Classification Of h_{FE}

Rank	Q	R	S
Range	120 - 270	180 - 390	270 - 560

Electrical Characteristics Curve

Figure 1. Current Gain vs Collector Current

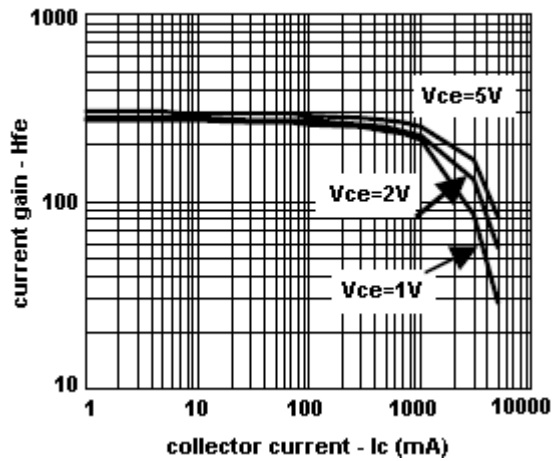


Figure 2. Saturation Voltage vs Collector Current

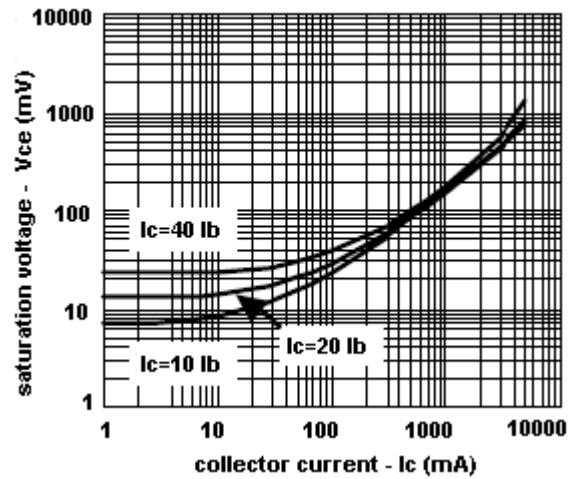


Figure 3. Saturation Voltage vs Collector Current

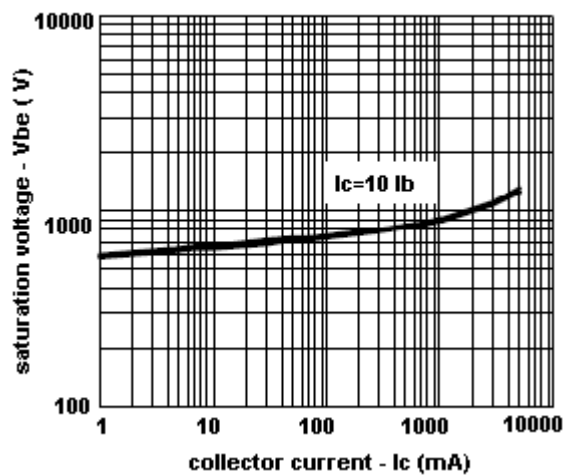
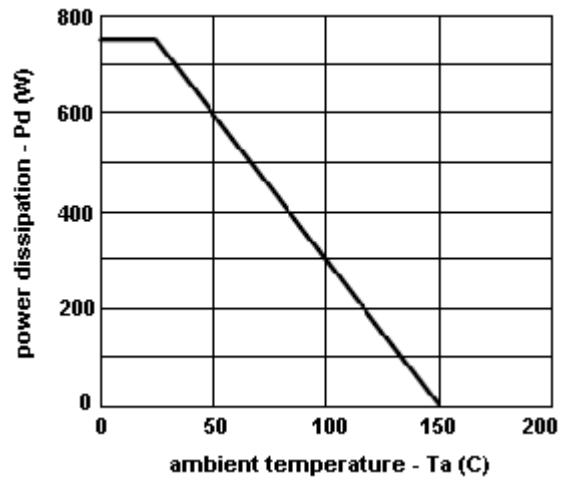
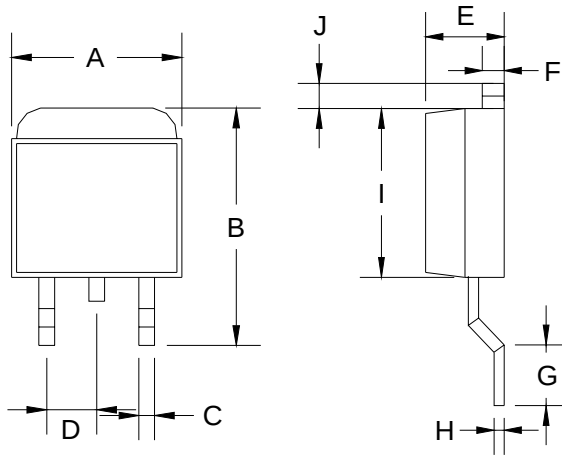


Figure 4. Power Derating Curves



TO-252 Mechanical Drawing



DIM	TO-252 DIMENSION			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.570	6.840	0.259	0.269
B	9.250	10.400	0.364	0.409
C	0.550	0.700	0.022	0.028
D	2.560	2.670	0.101	0.105
E	2.300	2.390	0.090	0.094
F	0.490	0.570	0.019	0.022
G	1.460	1.580	0.057	0.062
H	0.520	0.570	0.020	0.022
I	5.340	5.550	0.210	0.219
J	1.460	1.640	0.057	0.065