



TO-252
(DPAK)



Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CBO}	50V
BV_{CEO}	20V
I_C	5A
$V_{CE(SAT)}$	1V @ $I_C / I_B = 4A / 100mA$

Features

- Low $V_{CE(SAT)}$ -0.35 @ $I_C / I_B = 4A / 100mA$ (Typ.)
- Complementary part with TSB1412

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSD2118CP RO	TO-252	2.5Kpcs / 13" Reel

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	DC	5
		Pulse	10 (note 1)
Collector Power Dissipation	P_D	Ta=25°C	1 (note 2)
		Tc=25°C	10
Operating Junction Temperature	T_J	+150	°C
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	°C

Note: 1. Single pulse, $P_w \leq 380\mu s$, Duty $\leq 2\%$

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

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = 50\mu A, I_E = 0$	BV_{CBO}	50	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 1mA, I_B = 0$	BV_{CEO}	20	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 50\mu A, I_C = 0$	BV_{EBO}	6	--	--	V
Collector Cutoff Current	$V_{CB} = 40V, I_E = 0$	I_{CBO}	--	--	0.5	μA
Emitter Cutoff Current	$V_{EB} = 5V, I_C = 0$	I_{EBO}	--	--	0.5	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = 4A / 100mA$	$*V_{CE(SAT)}$	--	0.35	1	V
DC Current Transfer Ratio	$V_{CE} = 2V, I_C = 500mA$	$*h_{FE}$	120	--	560	
Transition Frequency	$V_{CE} = 6V, I_C = 50mA, f = 100MHz$	f_T	--	150	--	MHz
Output Capacitance	$V_{CB} = 20V, f = 1MHz$	C_{ob}	--	35	--	pF

* Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycle $\leq 2\%$

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

Figure 1. DC Current Gain

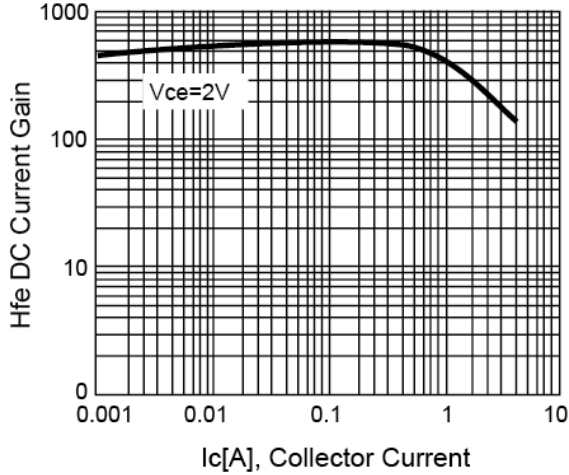


Figure 2. VCE(SAT) v.s. Ic

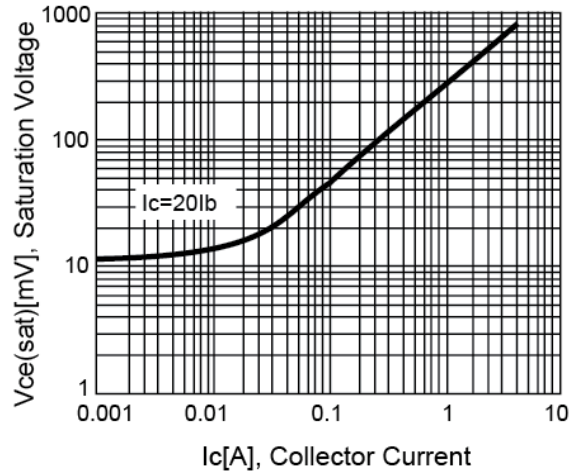


Figure 3. VBE(SAT) v.s. Ic

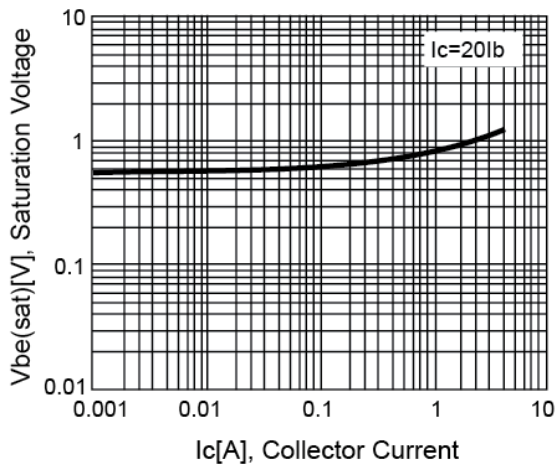
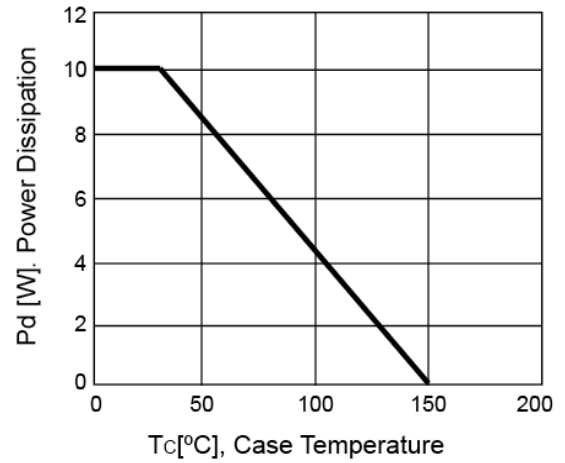
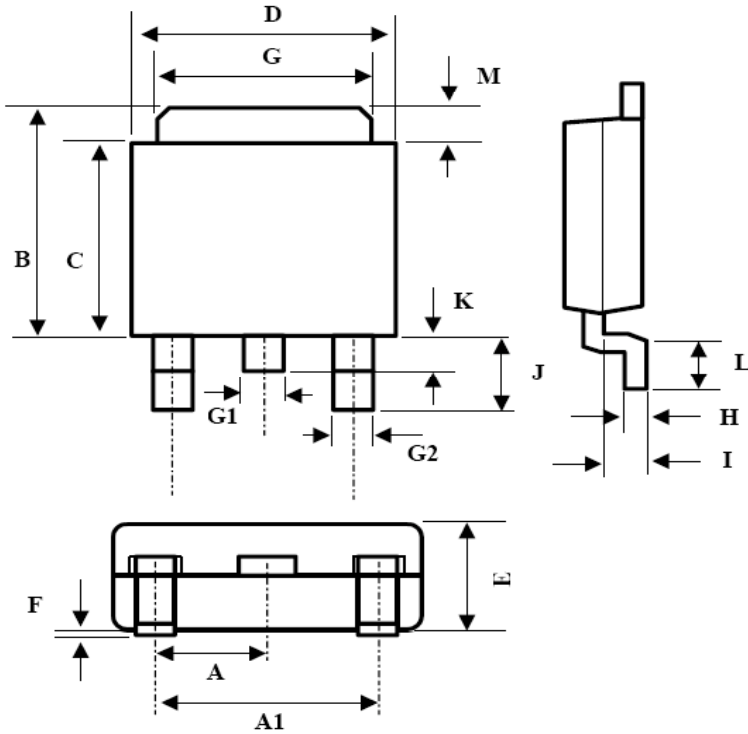


Figure 4. Power Derating Curve



TO-252 Mechanical Drawing



DIM	TO-252 DIMENSION			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.3BSC		0.09BSC	
A1	4.6BSC		0.18BSC	
B	6.80	7.20	0.268	0.283
C	5.40	5.60	0.213	0.220
D	6.40	6.65	0.252	0.262
E	2.20	2.40	0.087	0.094
F	0.00	0.20	0.000	0.008
G	5.20	5.40	0.205	0.213
G1	0.75	0.85	0.030	0.033
G2	0.55	0.65	0.022	0.026
H	0.35	0.65	0.014	0.026
I	0.90	1.50	0.035	0.059
J	2.20	2.80	0.087	0.110
K	0.50	1.10	0.020	0.043
L	0.90	1.50	0.035	0.059
M	1.30	1.70	0.051	0.67

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