

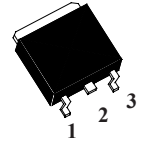
PNP EPITAXIAL PLANAR TRANSISTOR

 Lead(Pb)-Free

Features:

- * Excellent DC Current Gain Characteristics
- * Low $V_{CE(Sat)}$

1.BASE
2.COLLECTOR
3.EMITTER



D-PAK(TO-252)

Mechanical Data:

- * Case : Molded Plastic
- * Weight : 0.925 grams

ABSOLUTE MAXIMUM RATINGS($T_A=25^{\circ}C$)

Rating	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	-30	V
Collector to Emitter Voltage	V_{CEO}	-20	V
Collector to Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-5	A
Total Device Dissipation $T_A = 25^{\circ}C$	P_D	1.0	W
Junction Temperature	T_j	+150	$^{\circ}C$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}C$

Device Marking

2SB1412 = B1412

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage $I_C = -50\mu A, I_E = 0$	BV_{CBO}	-30	-	-	V
Collector-Emitter Breakdown Voltage $I_C = -1.0mA, I_B = 0$	BV_{CEO}	-20	-	-	V
Emitter-Base Breakdown Voltage $I_E = -50\mu A, I_C = 0$	BV_{EBO}	-6	-	-	V
Collector Cut-Off Current $V_{CB} = -20V, I_E = 0$	I_{CBO}	-	-	-500	nA
Emitter-Cut-Off Current $V_{EB} = -5V, I_C = 0$	I_{EBO}	-	-	-500	nA

ON CHARACTERISTICS

DC Current Gain $V_{CE} = -2V, I_C = -0.5A$	h_{FE}	82	-	390	-
Collector-Emitter Saturation Voltage $I_C = -4A, I_B = -0.1A$	$V_{CE(sat)}$	-	-	-1.0	V

DYNAMIC CHARACTERISTICS

Transition Frequency $V_{CE} = -6V, I_E = -50mA, f = 30MHz$	f_T	-	120	-	MHz
Output Capacitance $V_{CB} = -20V, I_E = 0, f = 1.0MHz$	C_{ob}	-	60	-	pF

CLASSIFICATION OF h_{FE}

Rank	P	Q	R
Range	82 - 180	120 - 270	180 - 390

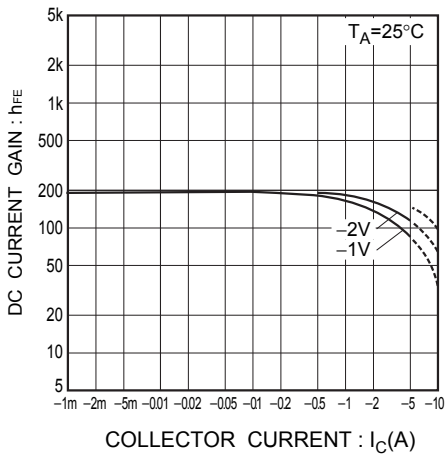


Fig.1 DC current gain vs collector current

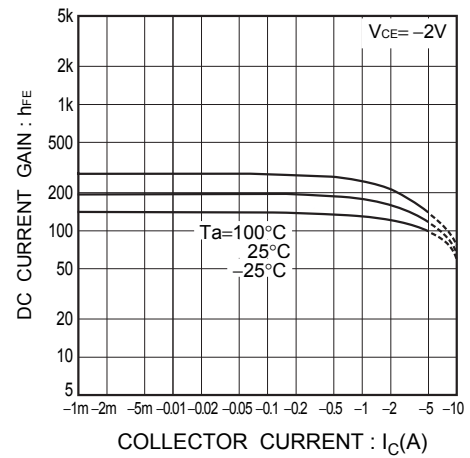


Fig.2 DC current gain vs. collector current

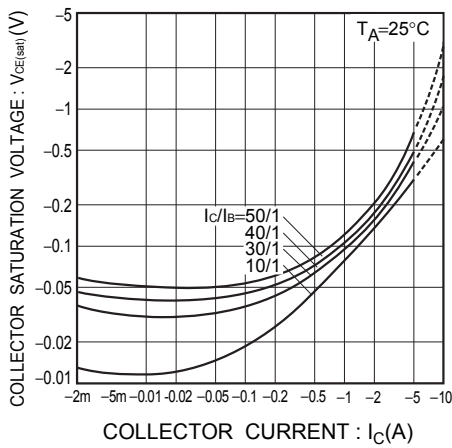


Fig.3 Collector-emitter saturation voltage vs. collector current

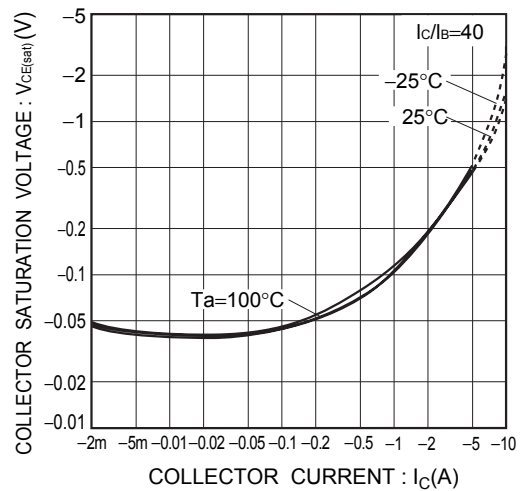


Fig.4 Collector-emitter saturation voltage vs. collector current

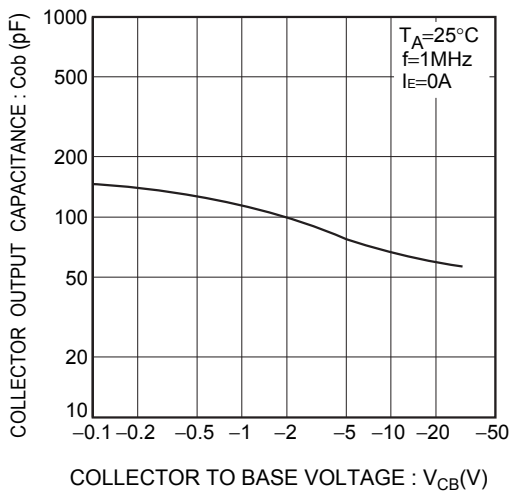


Fig.5 Collector output capacitance vs. collector-base voltage

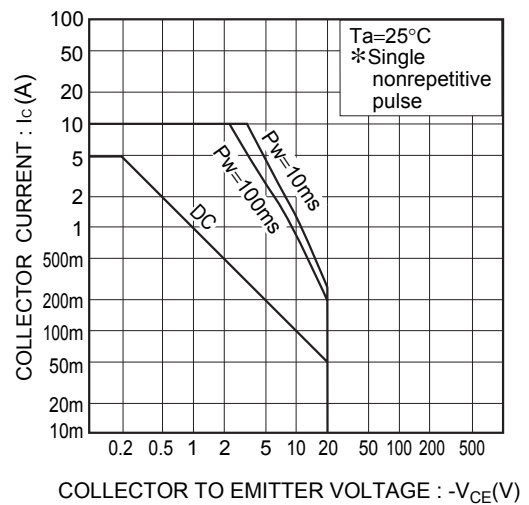
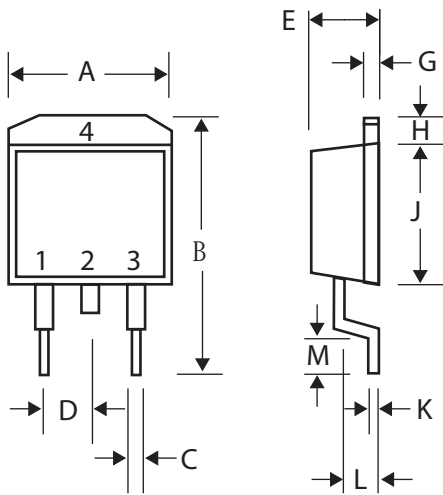


Fig.6 Safe operation area

TO-252 Outline Dimensions

unit:mm



TO-252		
Dim	Min	Max
A	6.40	6.80
B	9.00	10.00
C	0.50	0.80
D	-	2.30
E	2.20	2.50
G	0.45	0.55
H	1.00	1.60
J	5.40	5.80
K	0.30	0.64
L	0.70	1.70
M	0.90	1.50