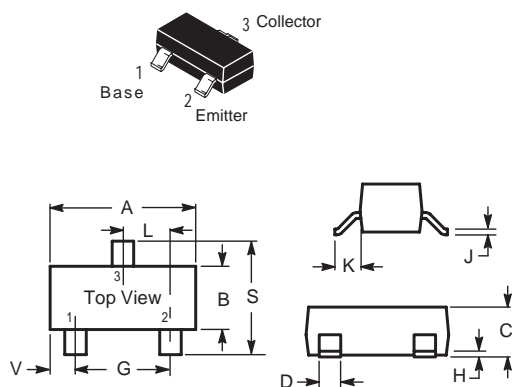


RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- High DC current gain : $h_{FE} = 1200$ (Typ)
- High emitter-base voltage. $V_{EBO} = 12V$ (Min.)
- Low $V_{CE(sat)}$. $V_{CE(sat)} = 0.18V$ (Typ.) ($I_C/I_B=500mA / 20mA$)

PACKAGE DIMENSIONS



SOT-23		
Dim	Min	Max
A	2.800	3.040
B	1.200	1.400
C	0.890	1.110
D	0.370	0.500
G	1.780	2.040
H	0.013	0.100
J	0.085	0.177
K	0.450	0.600
L	0.890	1.020
S	2.100	2.500
V	0.450	0.600
All Dimension in mm		

ABSOLUTE MAXIMUM RATINGS at $T_a = 25^\circ C$

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	12	V
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	250	mW
Junction, Storage Temperature	T_J, T_{STG}	+150, -55 ~ +150	$^\circ C$

CHARACTERISTICS at $T_a = 25^\circ C$

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	25	-	-	V	$I_C=10\mu A$
BV_{CEO}	20	-	-	V	$I_C=1mA$
BV_{EBO}	12	-	-	V	$I_E=10\mu A$
I_{CBO}	-	-	0.5	μA	$V_{CB}=20V$
I_{EBO}	-	-	0.5	μA	$V_{EB}=10V$
$*h_{FE1}$	820	-	2700		$V_{CE}=3V, I_C=10mA$
$V_{CE(sat)}$	-	-	0.4	V	$I_C=500mA, I_B=20mA$
fT	-	350	-	MHz	$V_{CE}=10V, I_C=50mA, f=100MHz$
C_{OB}	-	8	-	pF	$V_{CB}=10V, I_E=0, f=1MHz$
$R_{(ON)}$	-	0.8	-	Ω	$V_{IN}=0.1V(rms), I_B=1mA, f=1KHz$

CLASSIFICATION OF h_{FE1}

Rank	V	W
Range	820 - 1800	1200 - 2700
Marking	BBV	BBW

CHARACTERISTIC CURVES

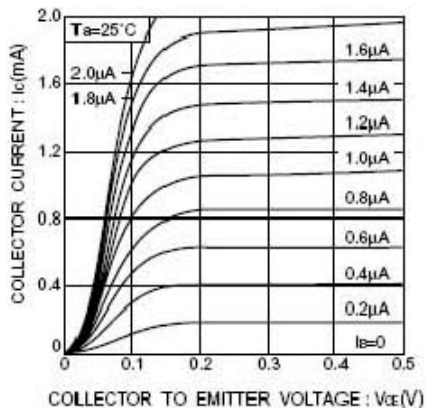


Fig.1 Grounded emitter output characteristics(I)

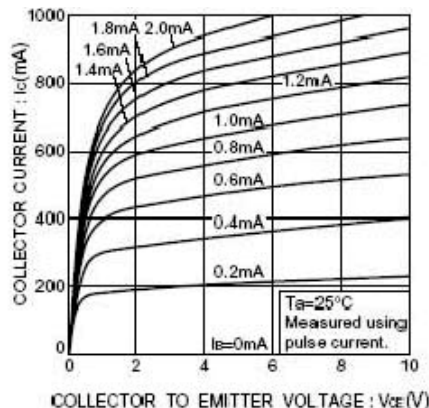


Fig.2 Grounded emitter output characteristics(II)

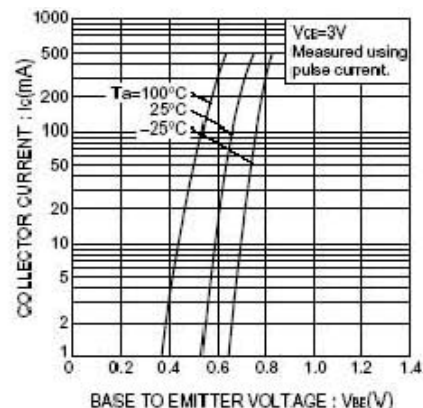


Fig.3 Grounded emitter propagation characteristics

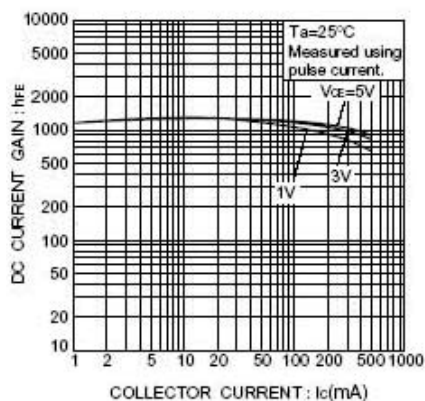


Fig.4 DC current gain vs. collector current(I)

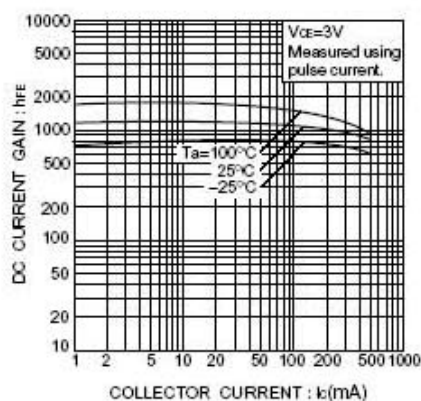


Fig.5 DC current gain vs. collector current(II)

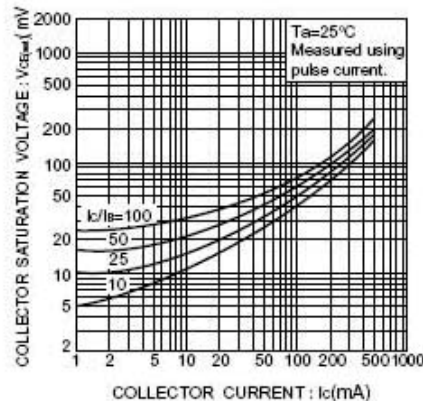


Fig.6 Collector-emitter saturation voltage vs. collector current(I)

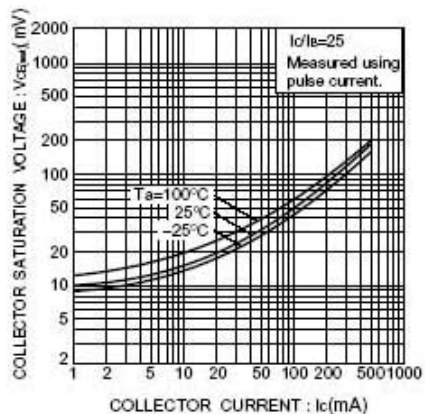


Fig.7 Collector-emitter saturation voltage vs. collector current(II)

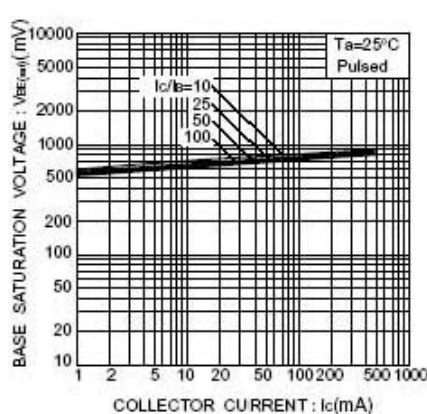


Fig.8 Base-emitter saturation voltage vs. collector current(I)

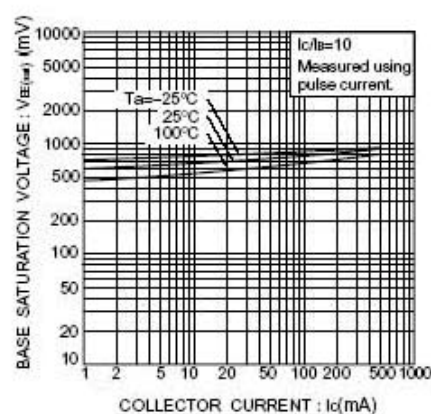


Fig.9 Base-emitter saturation voltage vs. collector current(II)

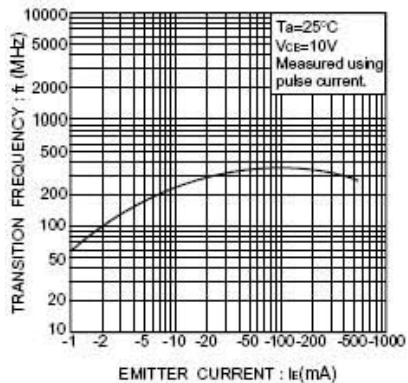


Fig. 10 Gain bandwidth product vs. emitter current

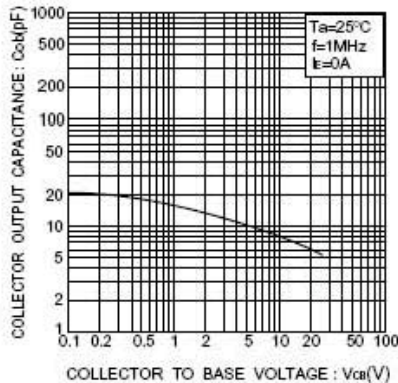


Fig. 11 Collector output capacitance vs. collector-base voltage

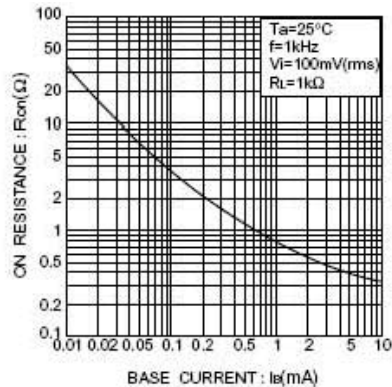


Fig. 12 Output-on resistance vs. base current