

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

FEATURE

- High DC Current Gain.
- High Emitter-Base Voltage. $V_{EBO}=12V$ (Min.)

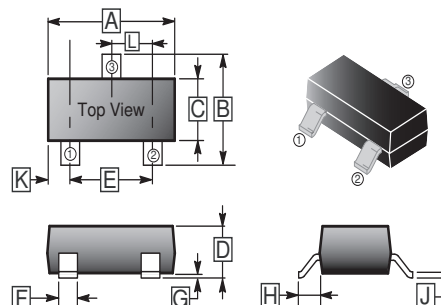
CLASSIFICATION OF h_{FE}

Product-Rank	2SD2114-V	2SD2114-W
Range	820~1800	1200~2700
Marking	BBV	BBW

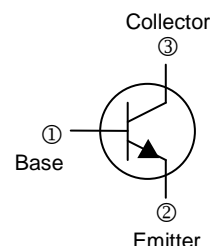
PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOT-23	3K	7' inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0.09	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise specified)

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	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	25	-	-	V	$I_C=10\mu A, I_E=0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	20	-	-	V	$I_C=1mA, I_B=0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	12	-	-	V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}	-	-	0.5	μA	$V_{CB}=20V, I_E=0$
Emitter Cut-Off Current	I_{EBO}	-	-	0.5	μA	$V_{EB}=10V, I_C=0$
DC Current Gain	h_{FE}	820	-	2700		$V_{CE}=3V, I_C=10mA$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=500mA, I_B=20mA$
Transition Frequency	f_T	-	350	-	MHz	$V_{CE}=10V, I_C=50mA, f=100MHz$
Collector Output Capacitance	C_{ob}	-	8	-	pF	$V_{CB}=10V, I_E=0, f=1MHz$
On Resistance	$R_{(on)}$	-	0.8	-	Ω	$V_{in}=0.1V(rms), I_B=1mA, f=1KHz$

CHARACTERISTIC CURVES

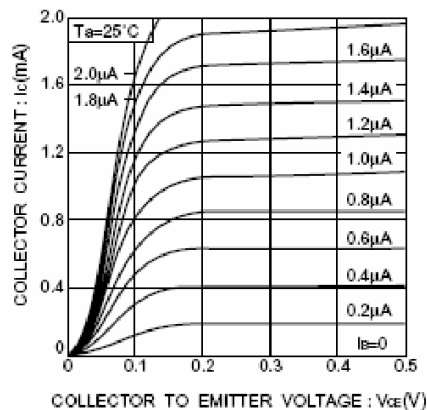


Fig.1 Grounded emitter output characteristics(I)

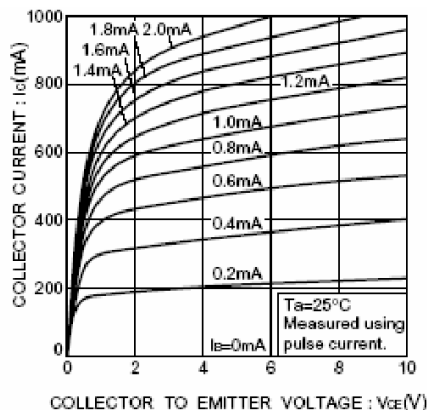


Fig.2 Grounded emitter output characteristics(II)

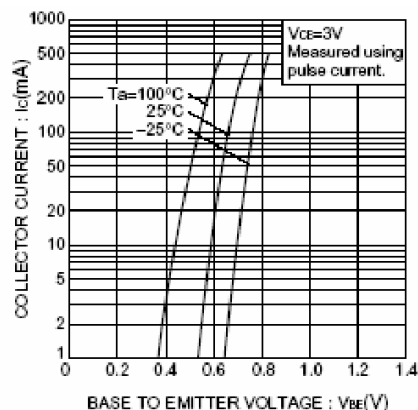


Fig.3 Grounded emitter propagation characteristics

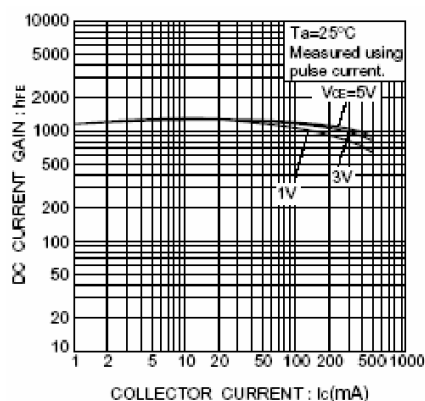


Fig.4 DC current gain vs. collector current(I)

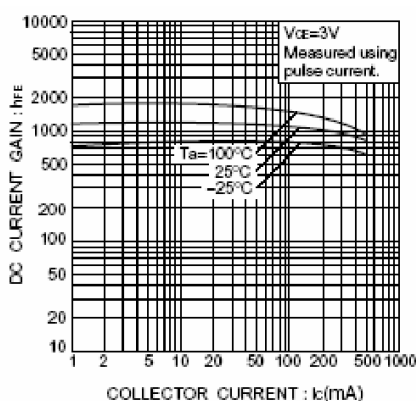


Fig.5 DC current gain vs. collector current(II)

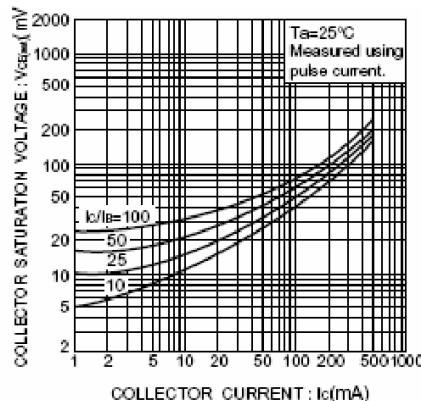


Fig.6 Collector-emitter saturation voltage vs. collector current(I)

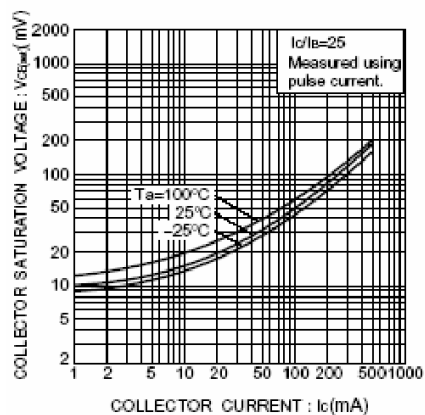


Fig.7 Collector-emitter saturation voltage vs. collector current(II)

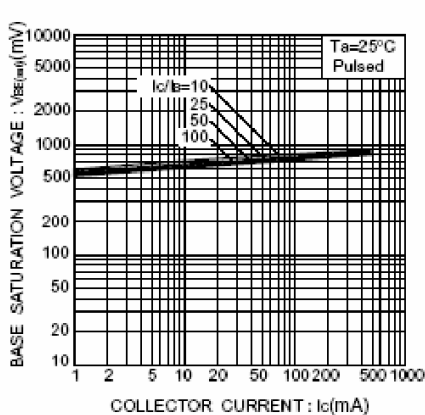


Fig.8 Base-emitter saturation voltage vs. collector current(I)

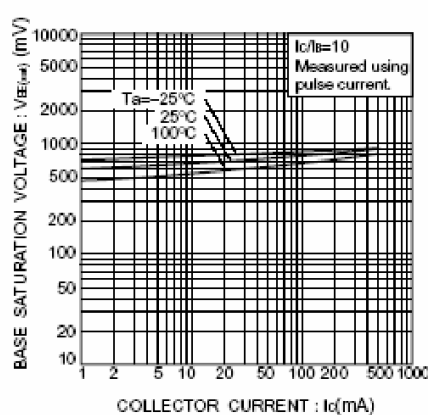


Fig.9 Base-emitter saturation voltage vs. collector current(II)

CHARACTERISTIC CURVES

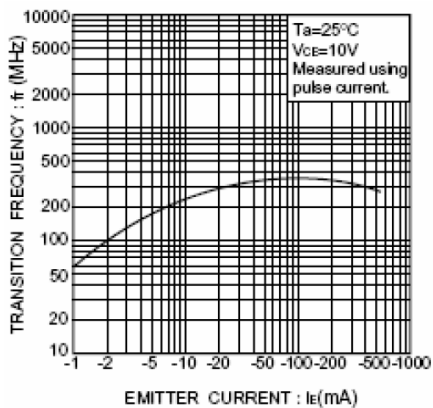


Fig.10 Gain bandwidth product vs. emitter current

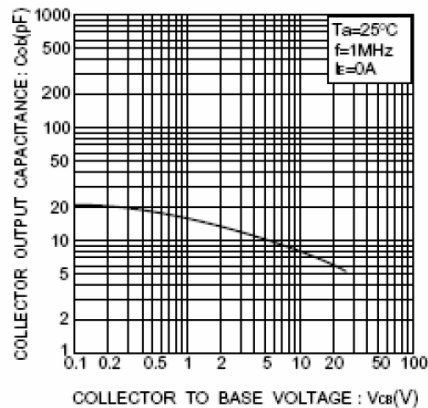


Fig.11 Collector output capacitance vs. collector-base voltage

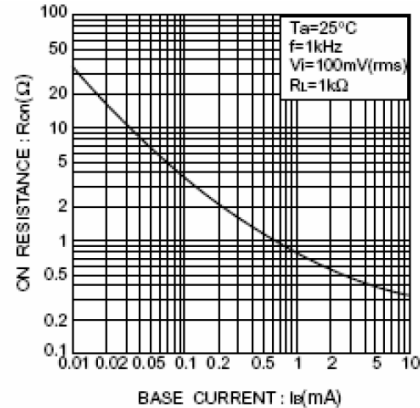


Fig.12 Output-on resistance vs. base current