

Epitaxial planar type NPN silicon transistor

●Features

- 1) High DC current gain.
 $h_{FE} = 1200$ (Typ.)
- 2) High emitter-base voltage.
 $V_{EBO} = 12V$ (Min.)
- 3) Low $V_{CE(sat)}$.
 $V_{CE(sat)} = 0.18V$ (Typ.)
($I_C / I_B = 500mA / 20mA$)
- 4) Pb-Free package is available.

●Absolute maximum ratings ($T_a=25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	25	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	12	V
Collector current	I_C	0.5	A(DC)
		1	A(Pulse) *
Collector power dissipation	P_C	0.2	W
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55~+150	$^\circ C$

* Single pulse $P_w=100ms$

●Electrical characteristics ($T_a=25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	25	—	—	V	$I_C=10\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	20	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	12	—	—	V	$I_E=10\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=20V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB}=10V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.18	0.4	V	$I_C/I_B=500mA/20mA$
DC current transfer ratio	h_{FE}	820	—	2700	—	$V_{CE}=3V, I_C=10mA$
Transition frequency	f_T^*	—	350	—	MHz	$V_{CE}=10V, I_E=-50mA, f=100MHz$
Output capacitance	C_{ob}	—	8.0	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$
Output On-resistance	R_{on}	—	0.8	—	pF	$I_B=1mA, V_i=100mV(rms), f=1kHz$

* Measured using pulse current

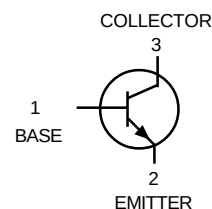
● h_{FE} Values Classification, Device Marking and Ordering Information

Device	h_{FE}	Marking	Shipping
L2SD2114KVLT1	820~1800	BV	3000/Tape&Reel
L2SD2114KVLT1G	820~1800	BV (Pb-Free)	3000/Tape&Reel
L2SD2114KWLT1	1200~2700	BW	3000/Tape&Reel
L2SD2114KWLT1G	1200~2700	BW (Pb-Free)	3000/Tape&Reel

L2SD2114K*LT1



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L2SD2114K*LT1

●Electrical characteristic curves

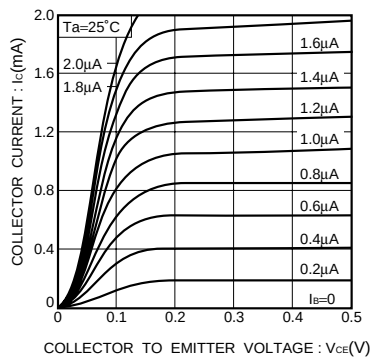


Fig.1 Grounded emitter output characteristics(I)

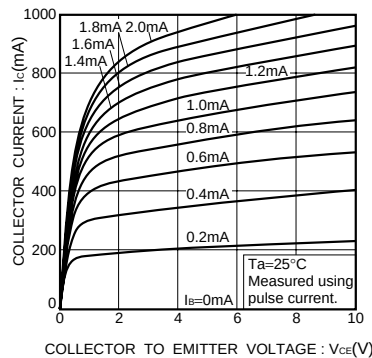


Fig.2 Grounded emitter output characteristics(II)

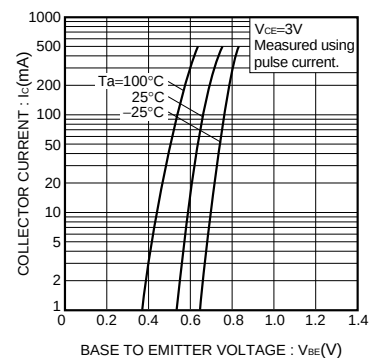


Fig.3 Grounded emitter propagation characteristics

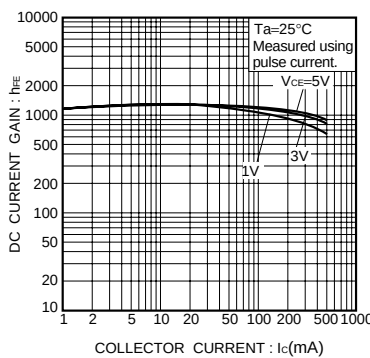


Fig.4 DC current gain vs. collector current(I)

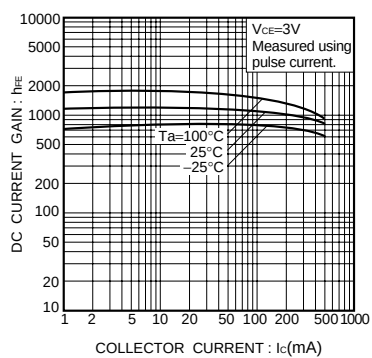


Fig.5 DC current gain vs. collector current(II)

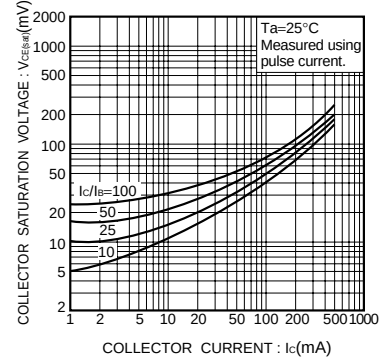


Fig.6 Collector-emitter saturation voltage vs. collector current(I)

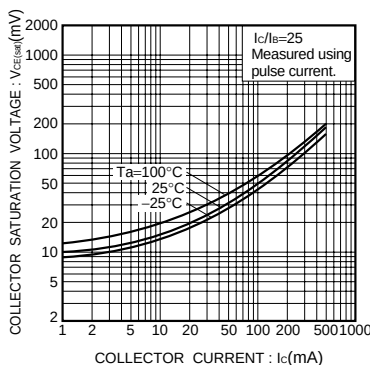


Fig.7 Collector-emitter saturation voltage vs. collector current(II)

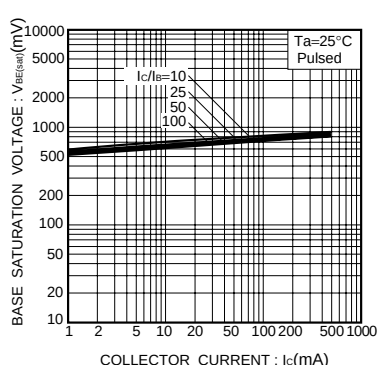


Fig.8 Base-emitter saturation voltage vs. collector current(I)

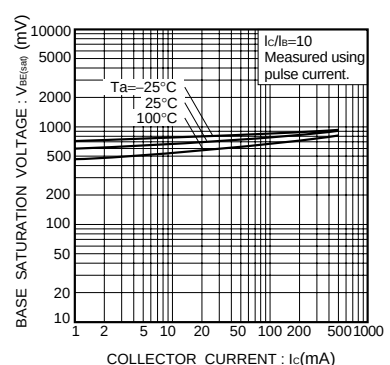


Fig.9 Base-emitter saturation voltage vs. collector current(II)

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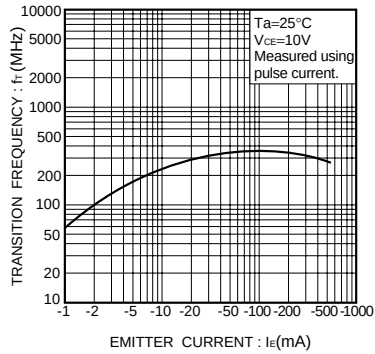


Fig.10 Gain bandwidth product vs. emitter current

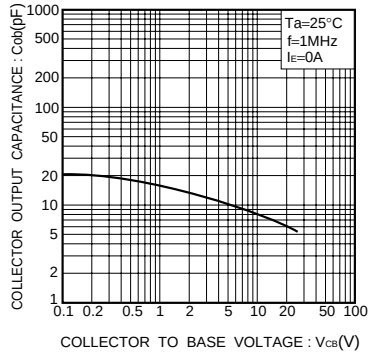


Fig.11 Collector output capacitance vs. collector-base voltage

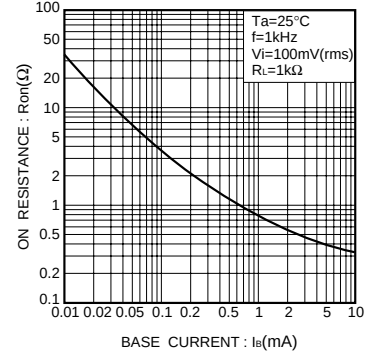
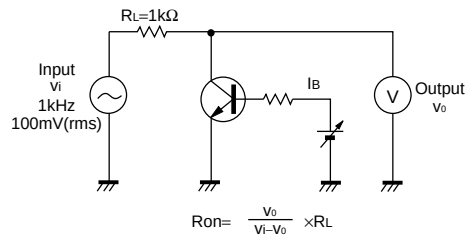


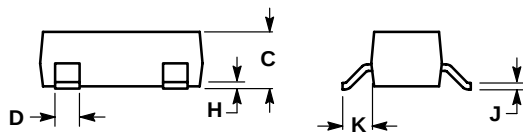
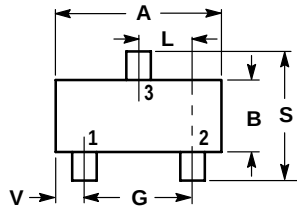
Fig.12 Output-on resistance vs. base current

●Ron measurement circuit



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NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

PIN 1. ANODE
2. NO CONNECTION
3. CATHODE

