



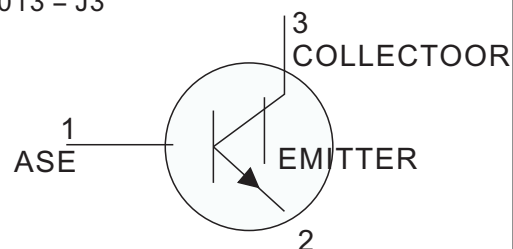
NPN Silicon

FEATURES

- High Collector Current.
- Complementary to S9013
- Excellent hFE Linearity.

EVICE MARKING

9013 = J3



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CE0}	25	Vdc
Collector–Base Voltage	V_{CBO}	40	Vdc
Emitter–Base Voltage	V_{EBO}	5.0	Vdc
Collector Current — Continuous	I_c	500	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) $T_A = 25^\circ\text{C}$	P_D	300	mW
Junction and Storage Temperature	T_J, T_{stg}	- 55 to +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)
OFF CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Collector–Emitter Breakdown Voltage(3) ($I_c = 1.0 \text{ mAdc}$, $I_E = 0$)	$V_{(BR)CE0}$	25	–	Vdc
Collector–Base Breakdown Voltage ($I_c = 100 \mu\text{Adc}$, $I_E = 0$)	$V_{(BR)CBO}$	40	–	Vdc
Emitter–Base Breakdown Voltage ($I_E = 100 \mu\text{Adc}$, $I_c = 0$)	$V_{(BR)EBO}$	5.0	–	Vdc
Collector cut-off current ($V_{CB} = 40 \text{ Vdc}$, $I_E = 0$)	I_{CBO}	–	0.1	μAdc
Collector cut-off current ($V_{CE} = 20 \text{ Vdc}$, $I_B = 0$)	I_{CEO}	–	0.1	μAdc
Emitter cut-off current ($V_{EB} = 5 \text{ Vdc}$, $I_c = 0$)	I_{EBO}	–	0.1	μAdc

1. FR–5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina. %.

3. Pulse Test: Pulse Width <300 μs , Duty Cycle <2.0

**ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)
ON CHARACTERISTICS (3)**

Characteristic	Symbol	Min	Max	Unit
DC Current Gain	h _{FE}			—
(I _C = 50 mA, V _{CE} = 1 Vdc)		120	400	
(I _C = 500 mA, V _{CE} = 1 Vdc)		40	—	
Collector–Emitter Saturation Voltage	V _{CE(sat)}			V _{dc}
(I _C = 500 mA, I _B = 50 mA)(3)		—	0.6	
Base–Emitter Saturation Voltage(3)	V _{BE(sat)}			V _{dc}
(I _C = 500 mA, I _B = 50 mA)		—	1.2	
Base-emitter voltage (V _{CB} =1V, I _C =10mA)	V _{BE}	—	0.7	

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product (I _C = 20mA, V _{CE} = 6.0Vdc, f = 30MHz)	f _T	150	–	MHz
Collector output capacitance (V _{CB} = 6.0Vdc, I _E = 0, f = 1.0 MHz)	C _{ob}	–	8.0	pF

CLASSIFICATION OF h_{FE}

Rank	L	H	J
Range	120-200	200-350	300-400

3. Pulse Test: Pulse Width <300 μs, Duty Cycle <2.0%.

TYPICAL CHARACTERISTICS

Fig.1 Power Derating Curve

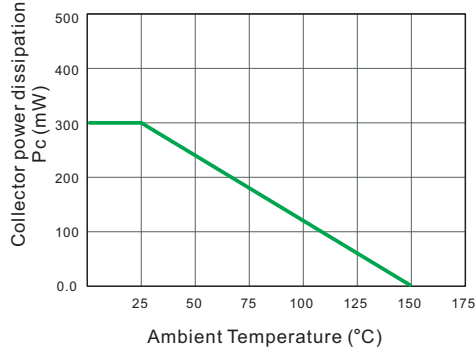


Fig.2 Static characteristics

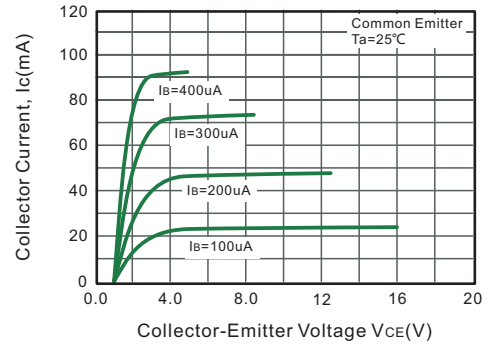


Fig.3 hFE--Ic

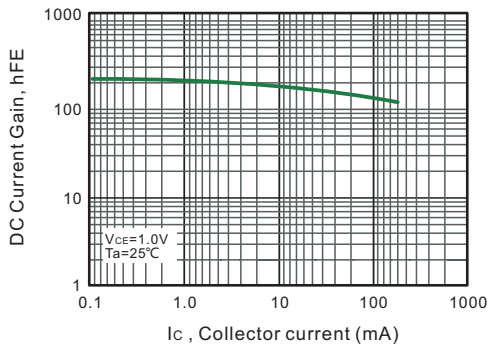


Fig.4 Ic--VBE

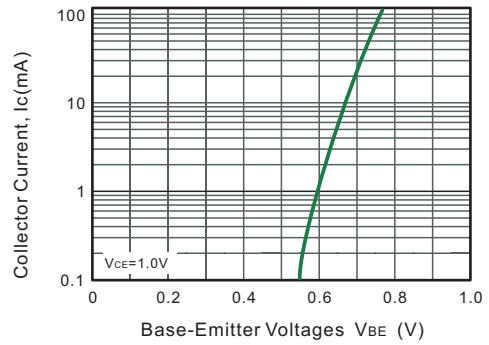


Fig.5 VBEsat--Ic

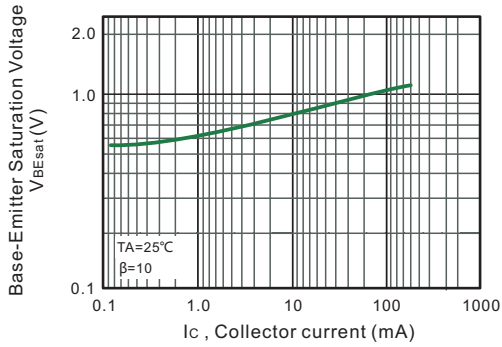


Fig.6 VCEsat--Ic

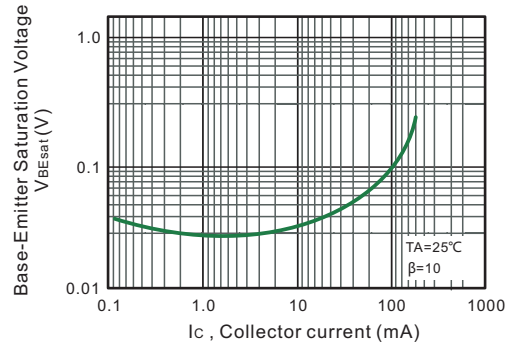


Fig.7 ft--Ic

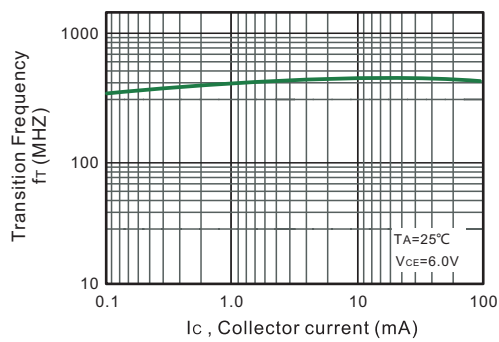
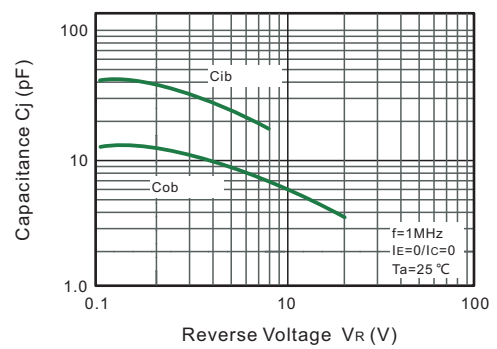


Fig.8 Cob/Cib--Vcb/VEB



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bipolar Transistors - BJT category](#):

Click to view products by [Wild Goose manufacturer](#):

Other Similar products are found below :

[BC559C](#) [MCH4017-TL-H](#) [MMBT-2369-TR](#) [BC546/116](#) [NJVMJD148T4G](#) [NTE16](#) [NTE195A](#) [IMX9T110](#) [2N4401-A](#) [2N6728](#) [2SA1419T-TD-H](#) [2SB1204S-TL-E](#) [2SC5488A-TL-H](#) [FMC5AT148](#) [2N2369ADCSM](#) [2N2907A](#) [2N3904-NS](#) [2N5769](#) [2SC4618TLN](#) [CPH6501-TL-E](#) [US6T6TR](#) [BAX18/A52R](#) [BC556/112](#) [IMZ2AT108](#) [MMST8098T146](#) [MCH6102-TL-E](#) [BC846B-13-F](#) [2N3879](#) [30A02MH-TL-E](#) [NTE13](#) [NTE282](#) [NTE323](#) [NTE350](#) [NTE81](#) [JANTX2N2920L](#) [JANSR2N2907AUB](#) [CMLT3946EG TR](#) [SNSS40600CF8T1G](#) [CMLT3906EG TR](#) [GRP-DATA-JANS2N2907AUB](#) [GRP-DATA-JANS2N2222AUA](#) [MMDT3946FL3-7](#) [2N4240](#) [JANS2N3019](#) [MSB30KH-13](#) [2N2221AUB](#) [2SD1815T-TL-E](#) [2N6678](#) [2N2907Ae4](#) [JAN2N3507](#)