

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

FEATURES

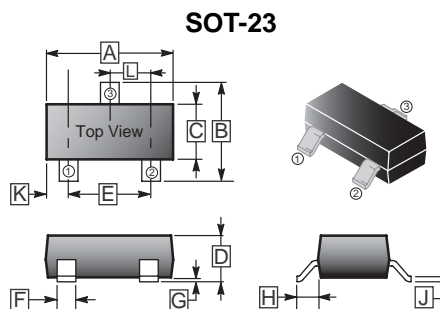
Ideal for medium power amplification and switching

MARKING

2L

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Collector to Emitter Voltage	V_{CEO}	-150	V
Collector to Base Voltage	V_{CBO}	-160	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-500	mA



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.00	G	0.10	REF.
B	2.25	2.55	H	0.55	REF.
C	1.20	1.40	J	0.08	0.15
D	0.90	1.15	K	0.5	REF.
E	1.80	2.00	L	0.95	TYP.
F	0.30	0.50			

THERMAL CHARACTERISTICS

Parameter	Symbol	Ratings	Unit
Total Power Dissipation $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW / $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C} / \text{W}$
Total Power Dissipation Alumina Substrate, ⁽²⁾ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW / $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C} / \text{W}$
Junction, Storage Temperature	T_J, T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

Test Conditions	Symbol	Min.	Max.	Unit
Off Characteristics				
Collector-Emitter Breakdown Voltage $I_C = -1.0 \text{ mA}, I_B = 0$	BV_{CEO}	-150	-	V
Collector-Base Breakdown Voltage $I_C = -100 \mu\text{A}, I_E = 0$	BV_{CBO}	-160	-	V
Emitter-Base Breakdown Voltage $I_E = -10 \mu\text{A}, I_C = 0$	BV_{EBO}	-5.0	-	V
Collector Cutoff Current $V_{CB} = -120 \text{ V}, I_E = 0$ $V_{CB} = -120 \text{ V}, I_E = 0, T_A = 100^\circ\text{C}$	I_{CES}	-	-100 -100	nA μA
On Characteristics				
DC Current Gain $I_C = -1.0 \text{ mA}, V_{CE} = -5.0 \text{ V}$ $I_C = -10 \text{ mA}, V_{CE} = -5.0 \text{ V}$ $I_C = -50 \text{ mA}, V_{CE} = -5.0 \text{ V}$	h_{FE}	80 100 50	- 200 -	-
Collector-Emitter Saturation Voltage $I_C = -10 \text{ mA}, I_B = -1.0 \text{ mA}$ $I_C = -50 \text{ mA}, I_B = -5.0 \text{ mA}$	$V_{CE(sat)}$	-	-0.2 -0.5	V
Base-Emitter Saturation Voltage $I_C = -10 \text{ mA}, I_B = -1.0 \text{ mA}$ $I_C = -50 \text{ mA}, I_B = -5.0 \text{ mA}$	$V_{BE(sat)}$	-	-1.0 -1.0	V
Small Signal Characteristics				
Current-Gain - Bandwidth Product $I_C = -10 \text{ mA}, V_{CE} = -10 \text{ V}, f = 100 \text{ MHz}$	f_T	100	-	MHz
Output Capacitance $V_{CB} = -10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$	C_{OBO}	-	6.0	pF
Small Signal Current Gain $I_C = -1.0 \text{ mA}, V_{CE} = -10 \text{ V}, f = 1.0 \text{ kHz}$	h_{FE}	50	200	-
Noise Figure $I_C = -200 \mu\text{A}, V_{CE} = -5.0 \text{ V}, R_S = 10 \Omega, f = 1.0 \text{ kHz}$	NF	-	8.0	dB

Note: 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.

CHARACTERISTICS CURVE

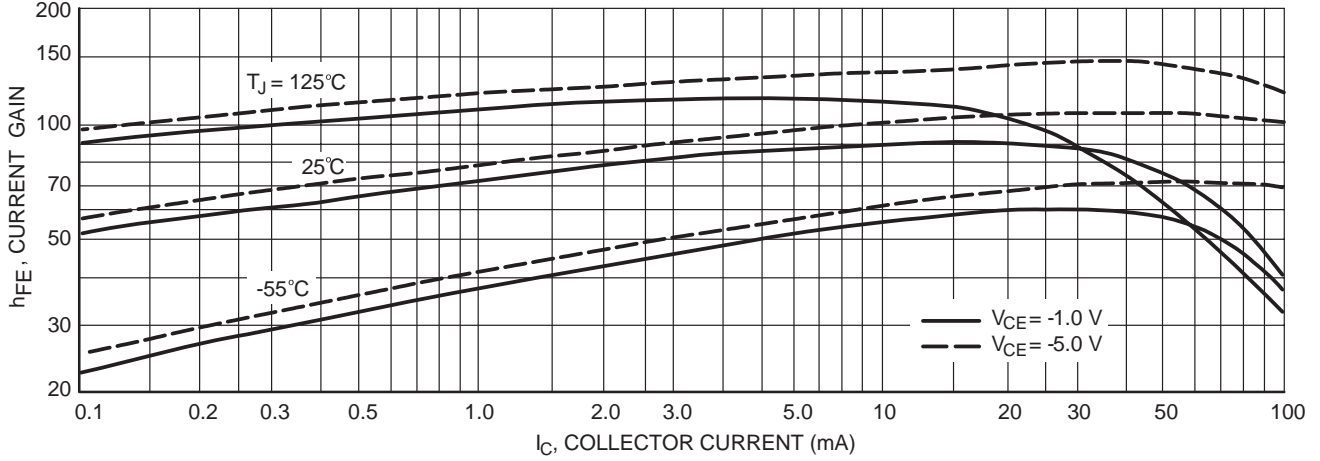


Figure 1. DC Current Gain

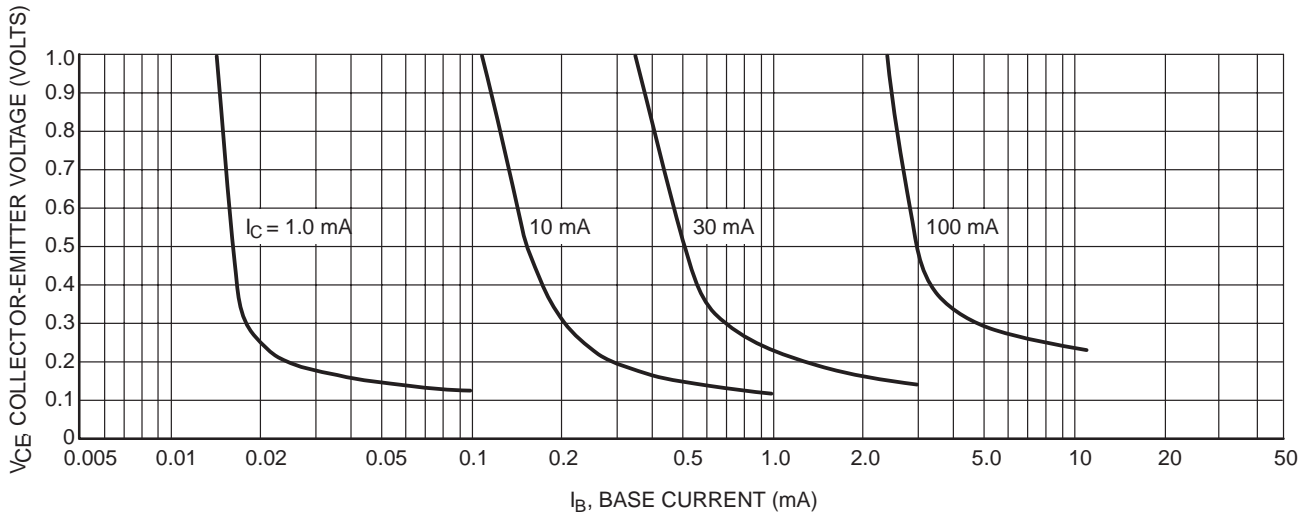


Figure 2. Collector Saturation Region

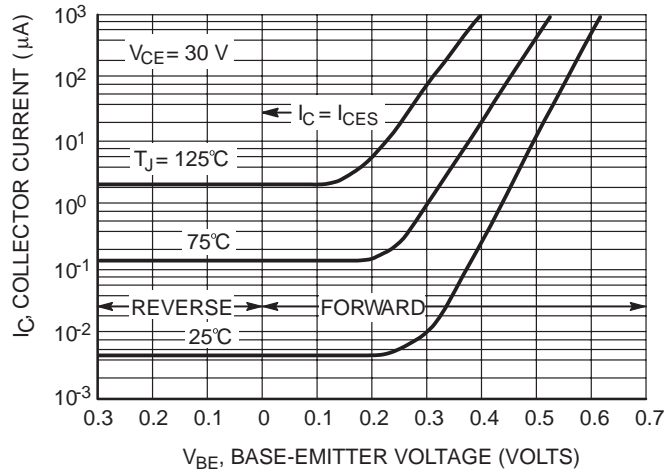


Figure 3. Collector Cut-Off Region

CHARACTERISTICS CURVE

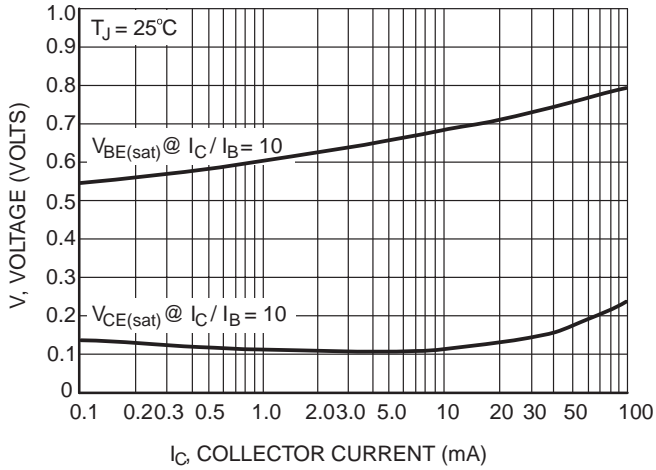


Figure 4. "On" Voltages

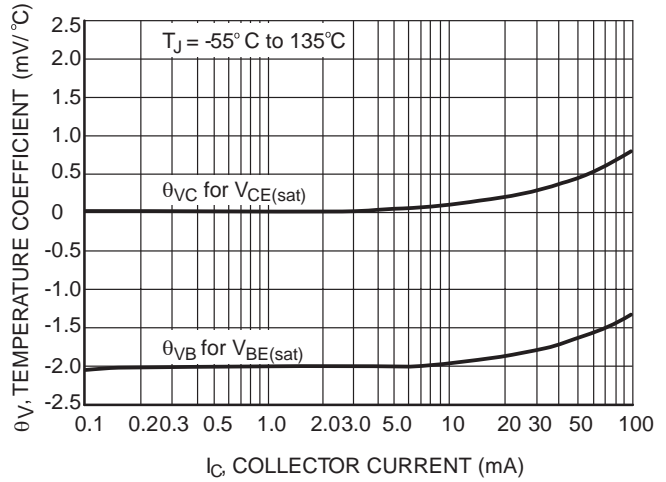
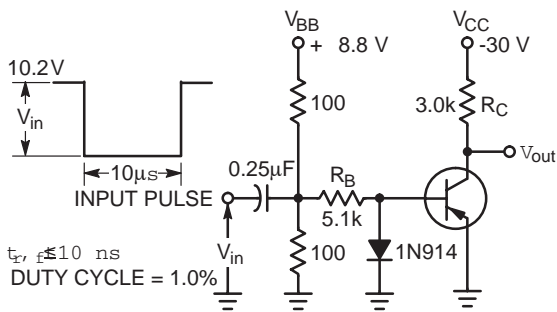


Figure 5. Temperature Coefficients



Values Shown are for I_C @ 10 mA
Figure 6. Switching Time Test Circuit

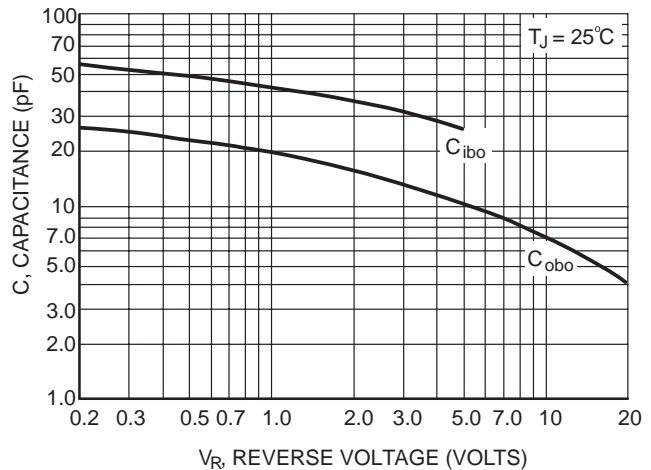


Figure 7. Capacitances

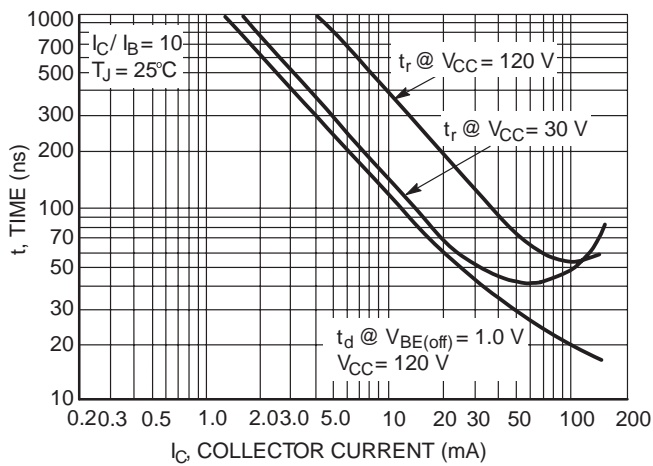


Figure 8. Turn-On Time

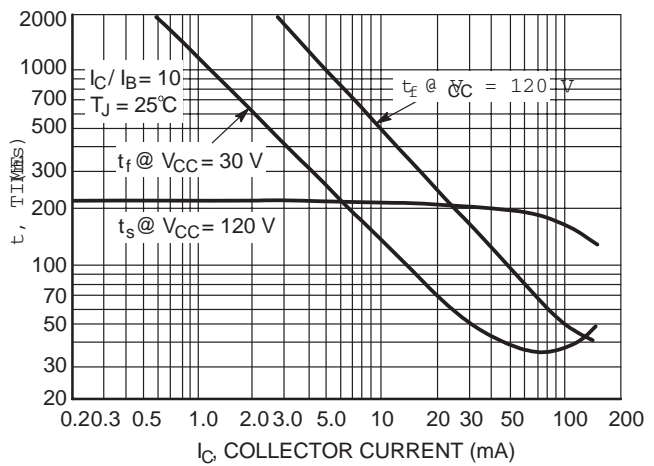


Figure 9. Turn-Off Time