

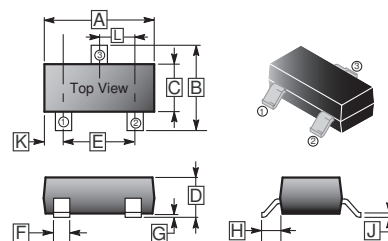
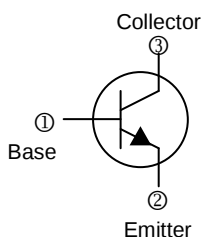
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

SOT-323

FEATURE

- Ideal for Medium Power Amplification and Switching
- Also Available in Lead Free Version
- Complementary to MMBT5401W

MARKING: K4N



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	-	-
E	1.20	1.40	L	0.650 TYP.	
F	0.20	0.40			

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	200	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating & Storage Temperature	T_J, T_{STG}	150, -55 ~ 150	$^\circ\text{C}$

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

CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT	TEST CONDITION
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	180		V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	160		V	$I_C = 1\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6		V	$I_E=10\mu\text{A}, I_C=0$
Collector Cutoff Current	I_{CBO}		50	nA	$V_{CB}=120\text{V}, I_E=0$
Emitter Cutoff Current	I_{EBO}		50	nA	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain	h_{FE1}	80			$V_{CE}=5\text{V}, I_C=1\text{mA}$
	h_{FE2}	80	250		$V_{CE}=5\text{V}, I_C=10\text{mA}$
	h_{FE3}	30			$V_{CE}=5\text{V}, I_C=50\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.15	V	$I_C=10\text{mA}, I_B=1\text{mA}$
	$V_{CE(sat)}$		0.2	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Base-Emitter Voltage	$V_{BE(sat)}$		1	V	$I_C=10\text{mA}, I_B=1\text{mA}$
	$V_{BE(sat)}$		1	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Transition Frequency	f_T	100	300	MHz	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$
Collector Output Capacitance	C_{ob}		6	pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$
Noise Figure	NF		8	dB	$V_{CE}=5\text{V}, I_C=0.2\text{mA}, f=1\text{kHz}, R_S=1\text{k}\Omega$

CHARACTERISTIC CURVES

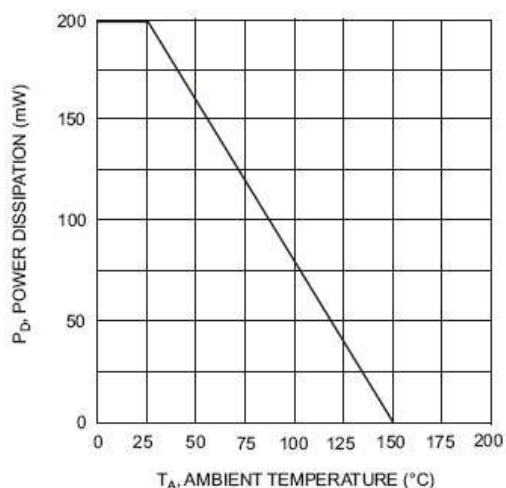


Fig. 1, Max Power Dissipation vs Ambient Temperature

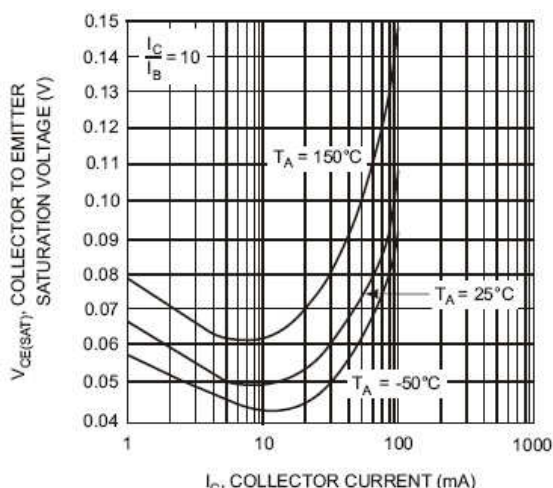


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

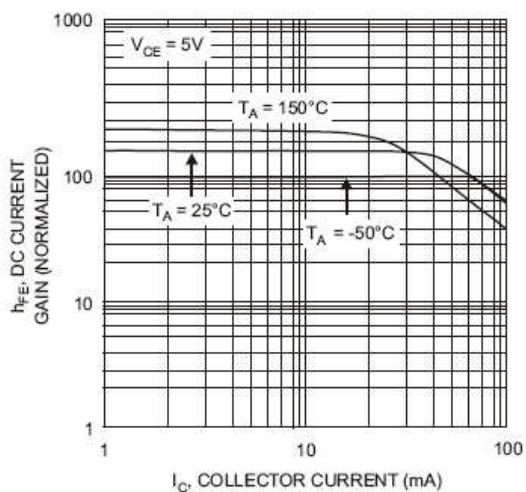


Fig. 3, DC Current Gain vs Collector Current

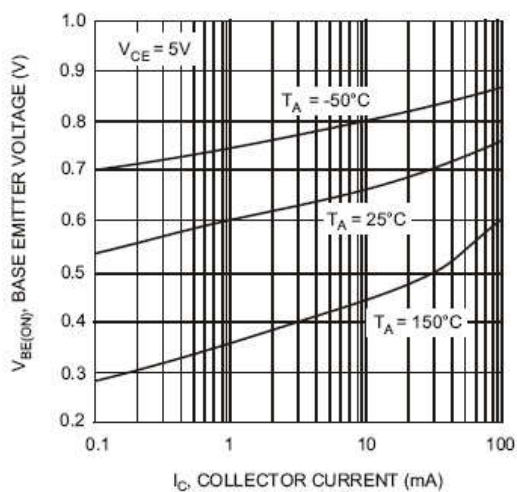


Fig. 4, Base Emitter Voltage vs. Collector Current

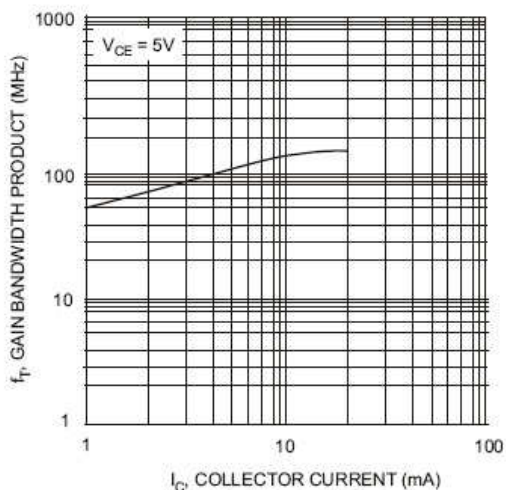


Fig. 5, Gain Bandwidth Product vs. Collector Current