

## Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

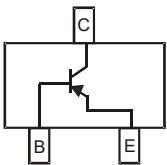
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-60	V
Collector-Emitter Voltage	$V_{CEO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-600	mA
Collector Power Dissipation	$P_C$	200	mW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

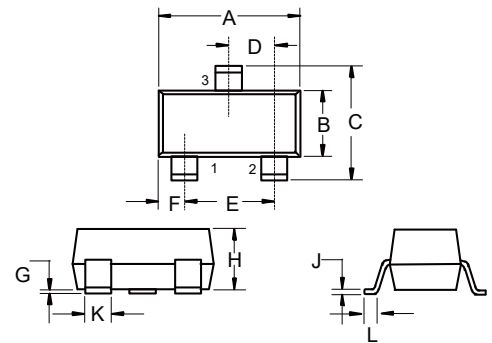
Marking: K3F

## Internal Structure



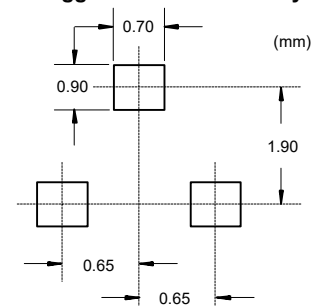
# PNP Small Signal Transistors

## SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

## Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60			V	$I_C = -10\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-60			V	$I_C = -10mA, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E = -10\mu A, I_C = 0$
Collector-Base Cutoff Current	$I_{CBO}$			-10	nA	$V_{CB} = -50V, I_E = 0$
Collector-Emitter Cutoff Current	$I_{CEO}$			-50	nA	$V_{CE} = -35V, I_B = 0$
Emitter-Base Cutoff Current	$I_{EBO}$			-10	nA	$V_{EB} = -3V, I_C = 0$
DC Current Gain (Note2)	$h_{FE(1)}$	100				$V_{CE} = -10V, I_C = -1mA$
	$h_{FE(2)}$	100		300		$V_{CE} = -10V, I_C = -150mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-1.6	V	$I_C = -500mA, I_B = -50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-2.6	V	$I_C = -500mA, I_B = -50mA$
Transition Frequency	$f_T$	200			MHz	$V_{CE} = -20V, I_C = -50mA, f = 100MHz$
Output Capacitance	$C_{cbo}$			8	pF	$V_{CB} = -10V, I_E = 0, f = 1MHz,$
Delay Time	$t_d$			10	ns	$V_{CC} = -30V, I_C = -150mA$
Rise Time	$t_r$			25	ns	$V_{BE(off)} = -0.5V, I_{B1} = -15mA$
Storage Time	$t_s$			80	ns	$V_{CC} = -30V, I_C = -150mA$
Fall Time	$t_f$			30	ns	$I_{B1} = I_{B2} = -15mA$

 Note: 2.Pluse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

### Curve Characteristics

Fig. 1 - Static Characteristics

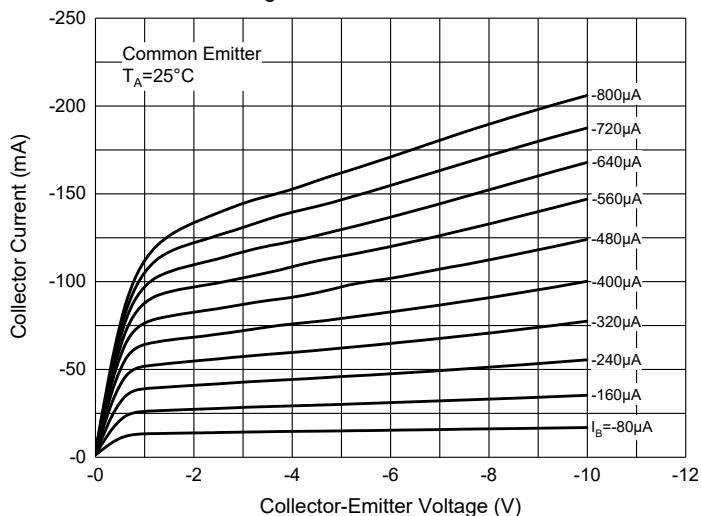


Fig. 2 - DC Current Gain Characteristics

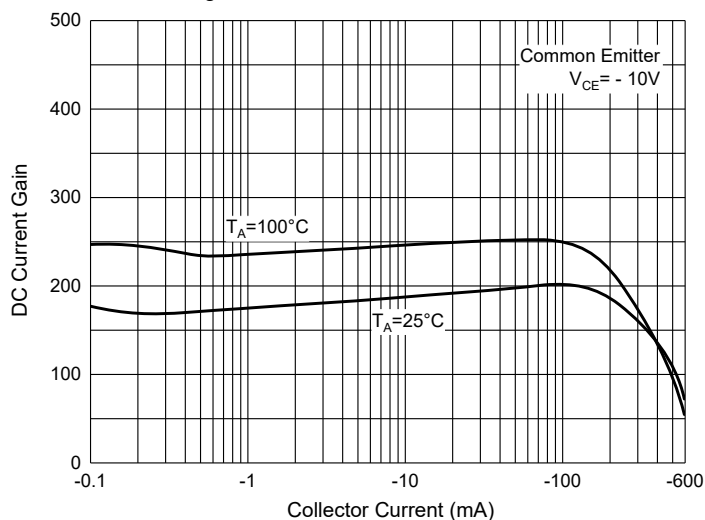


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

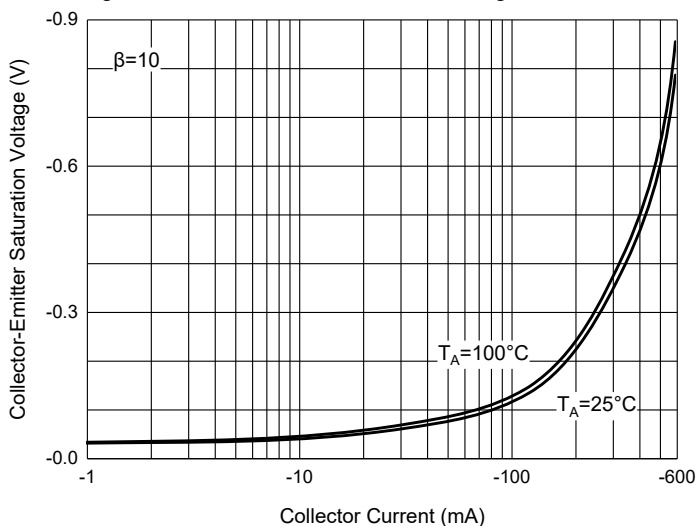


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

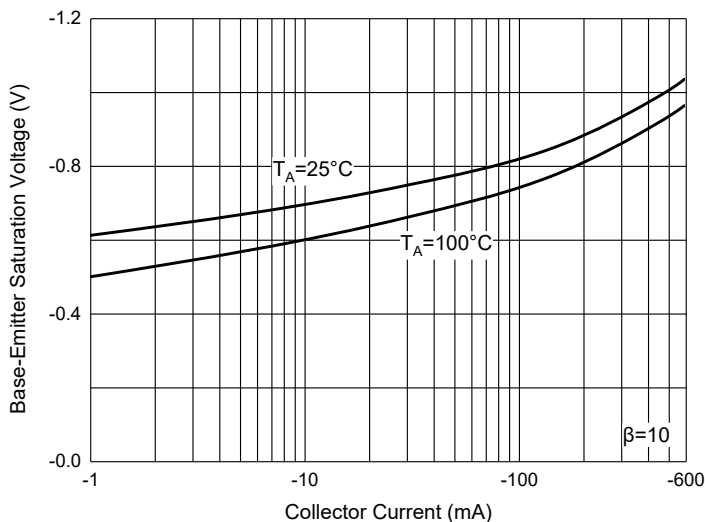


Fig. 5 - Base-Emitter Voltage Characteristics

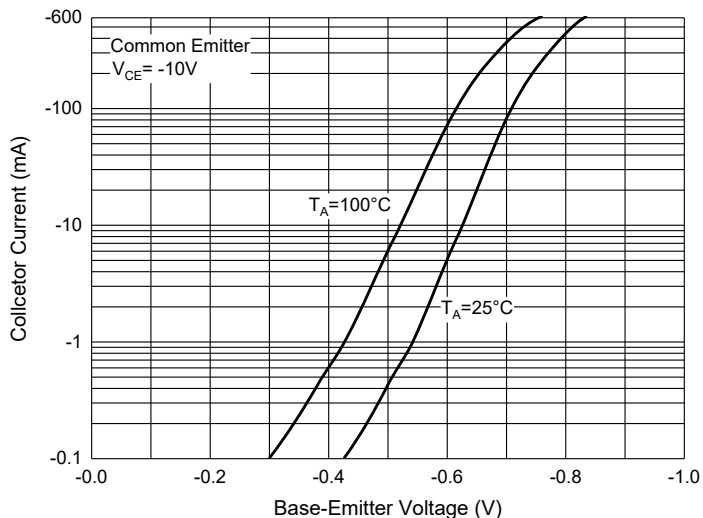


Fig. 6 - Collector Power Derating Curve

