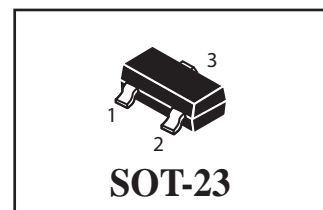
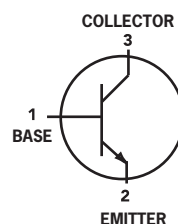


### Plastic-Encapsulate Transistors NPN Silicon

 Lead(Pb)-Free



#### MAXIMUM RATINGS (Ta=25°C)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	50	Vdc
Collector-Base Voltage	V <sub>CBO</sub>	60	Vdc
Emitter-Base Voltage	V <sub>EBO</sub>	5.0	Vdc
Collector Current -Continuous	I <sub>C</sub>	150	mAdc

#### THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Total Device Dissipation FR-5 Board <sup>(1)</sup> T <sub>A</sub> =25°C	P <sub>D</sub>	150	mW
Derate above 25°C		1.2	mW/°C
Thermal Resistance, Junction Ambient	R <sub>θJA</sub>	833	°C/W
Junction and Storage, Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

#### Device Marking

KTC3875=AL

#### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> = -1 mAdc, I <sub>B</sub> =0)	V <sub>(BR)CEO</sub>	50	-	Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> = -100 uAdc, I <sub>E</sub> =0)	V <sub>(BR)CBO</sub>	60	-	Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 100 uAdc, I <sub>C</sub> =0)	V <sub>(BR)EBO</sub>	5.0	-	Vdc
Collector Cutoff Current (V <sub>CB</sub> = 60Vdc, I <sub>E</sub> =0)	I <sub>CBO</sub>	-	0.1	uAdc
Emitter Cutoff Current (V <sub>EB</sub> = 5.0 Vdc, I <sub>C</sub> =0)	I <sub>EBO</sub>	-	0.1	uAdc

1. FR-5=1.0 ×0.75 ×0.062 in

# KTC3875



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

Characteristics	Symbol	Min	TYP	Max	Unit
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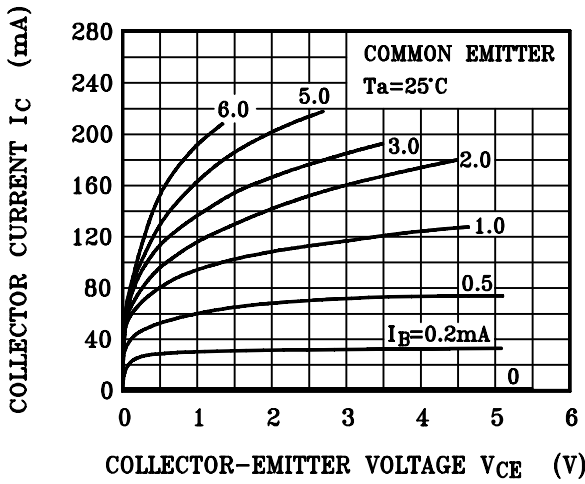
### ON CHARACTERISTICS

DC Current Gain ( $I_C=2\text{ mAdc}, V_{CE}=6.0\text{ Vdc}$ )	$h_{FE}$	70	-	700	-
Collector-Emitter Saturation Voltage ( $I_C=100\text{ mAdc}, I_B=10\text{ mAdc}$ )	$V_{CE(sat)}$	-	0.1	0.25	Vdc
Collector Output Capacitance ( $V_{CB}=10\text{ V}, I_E=0, f=1\text{ MHz}$ )	$C_{ob}$	-	2.0	3.5	Vdc
Transition Frequency ( $I_C=1\text{ mAdc}, V_{CE}=10\text{ Vdc}$ )	$f_T$	80	-	-	MHz
Noise Figure ( $V_{CE}=6\text{ V}, I_C=0.1\text{ mA}, R_g=10\text{ k}\Omega, f=1\text{ kHz}$ )	NF		1.0	10	dB

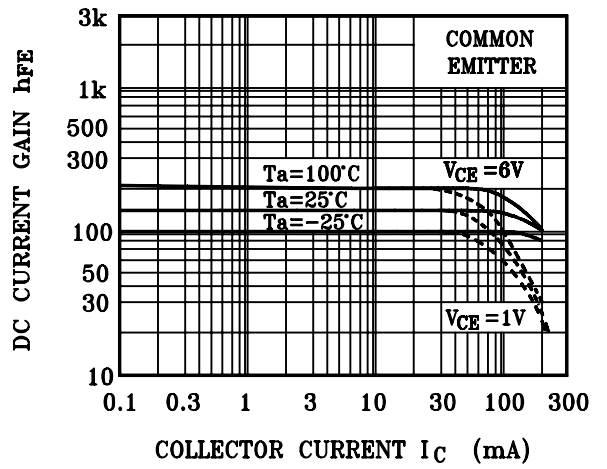
### Classification of $h_{FE}$

Rank	O	Y	G	BL
Range	70-140	120-240	200-400	350-700
Marking	ALO	ALY	ALG	ALL

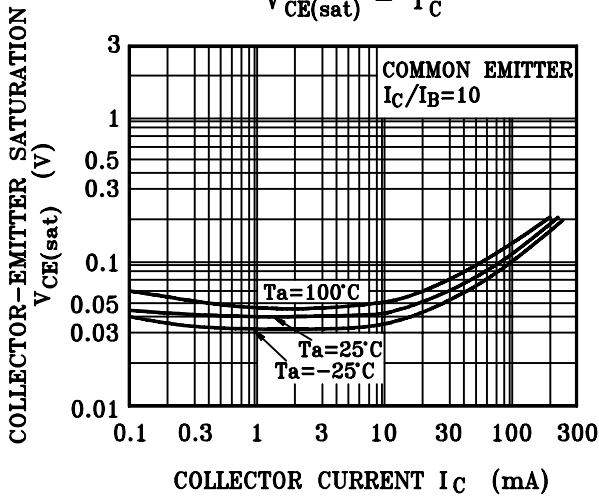
$I_C - V_{CE}$



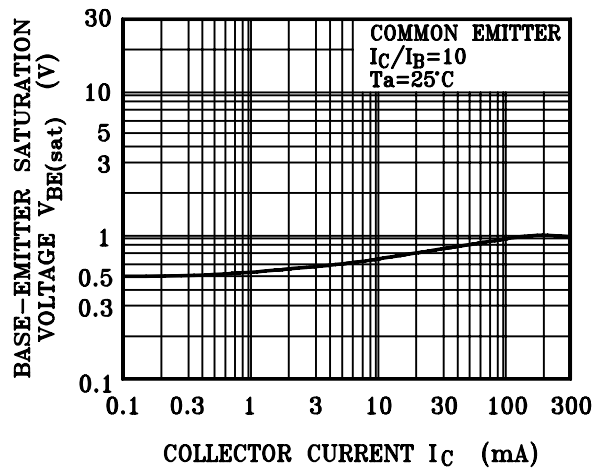
$h_{FE} - I_C$



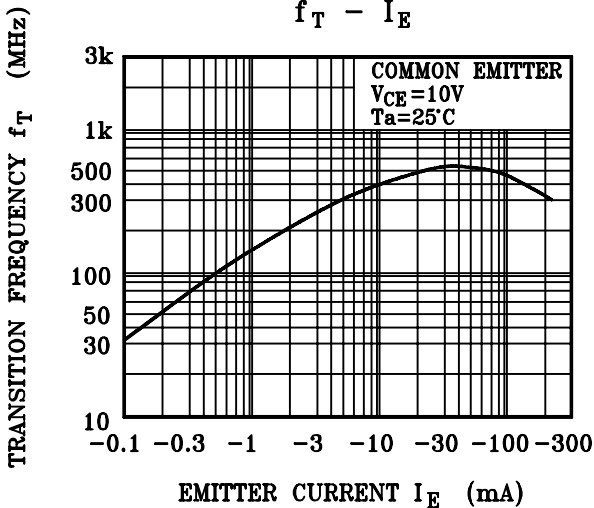
$V_{CE(sat)} - I_C$



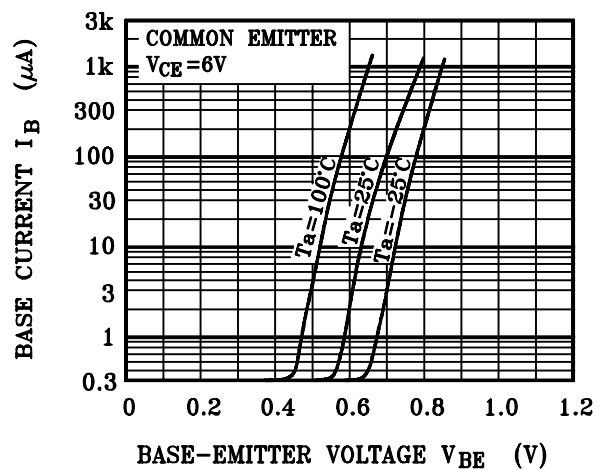
$V_{BE(sat)} - I_C$



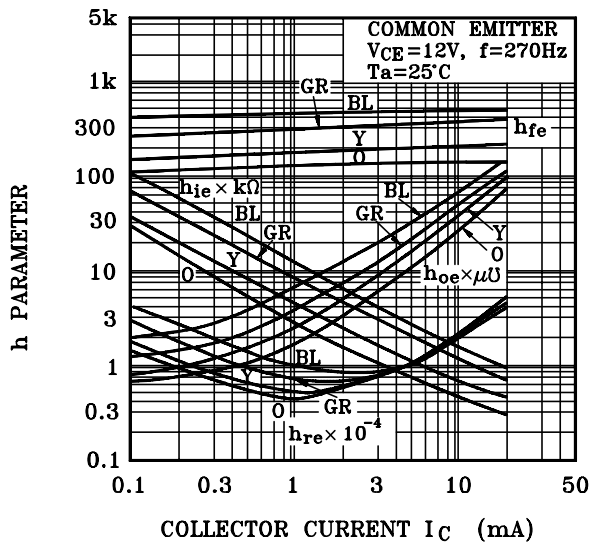
$f_T - I_E$



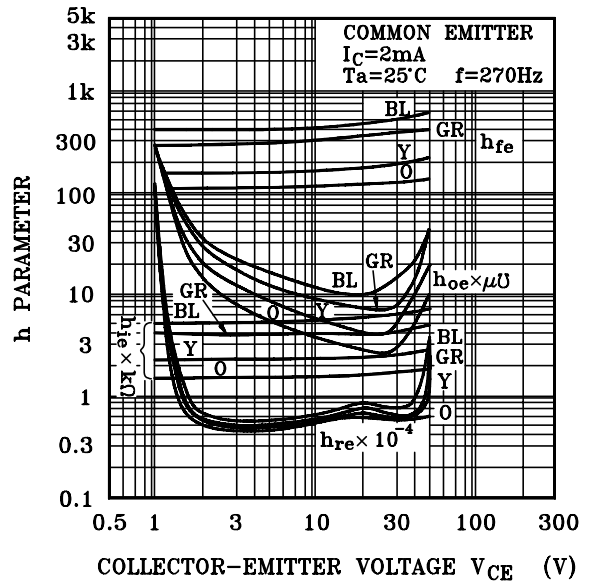
$I_B - V_{BE}$



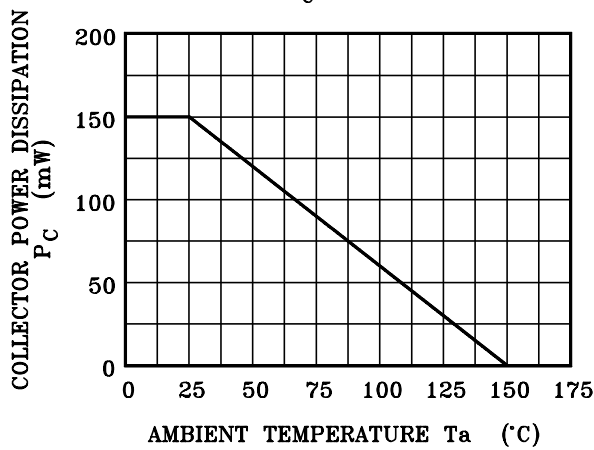
### h PARAMETER - $I_C$



### h PARAMETER - $V_{CE}$

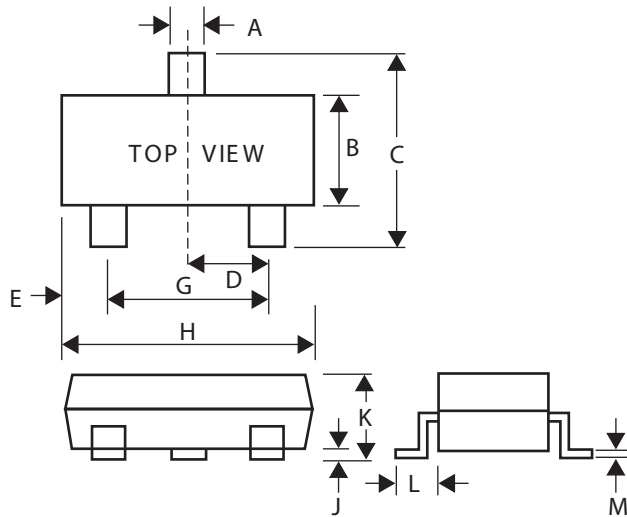


### $P_C$ - $T_a$



## SOT-23 Package Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25