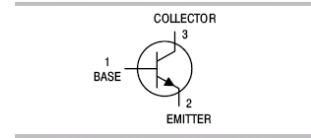


Features

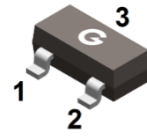
- High voltage and high current
- Excellent h_{FE} linearity
- Complementary to KTA1504
- RoHS compliant with Halogen-free

HF



Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
KTC3875-O	SOT-23	3000 pcs / Tape & Reel	ALO
KTC3875-Y	SOT-23	3000 pcs / Tape & Reel	ALY
KTC3875-GR	SOT-23	3000 pcs / Tape & Reel	ALG
KTC3875-BL	SOT-23	3000 pcs / Tape & Reel	ALL

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	60	V
Collector-Emitter Breakdown Voltage	V_{CEO}	50	V
Emitter-Base Breakdown Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	150	mA
Peak Collector Current	I_{CM}	200	mA
Base Current	I_B	30	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation($T_A = 25^\circ\text{C}$)	P_D	150	mW
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	250	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	150	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	190	$^\circ\text{C/W}$
Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 2\text{mA}$	70	-	700	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	0.1	0.25	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	-	1.1	V
Transition Frequency	f_T	$I_C = 1\text{mA}, V_{CE} = 10\text{V}$	80	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	-	2	3.5	pF
Noise Figure	NF	$V_{CE} = 6\text{V}, I_C = 0.1\text{mA}, f = 1\text{kHz}$	-	1.0	10	dB

Classification of h_{FE}

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

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

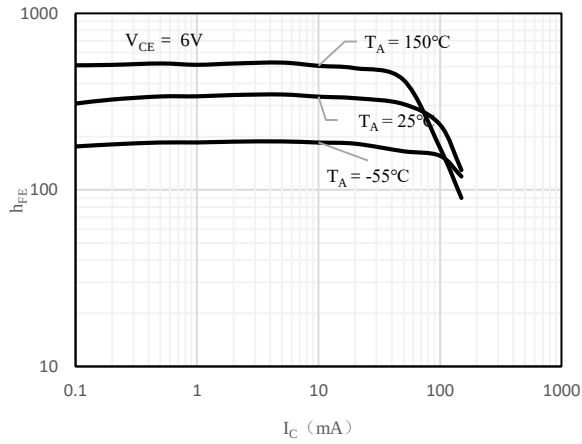


Fig 1 h_{FE} vs. I_C (R)

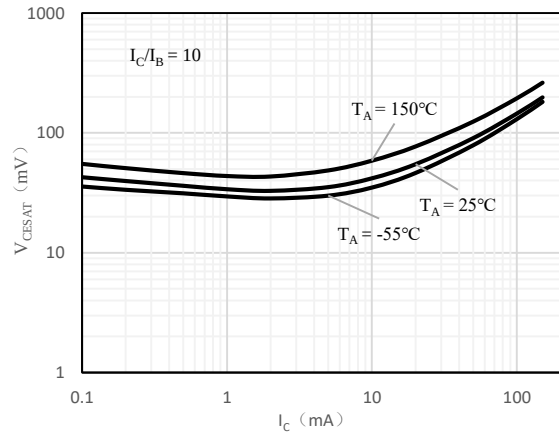


Fig 2 $V_{CE(sat)}$ vs. I_C

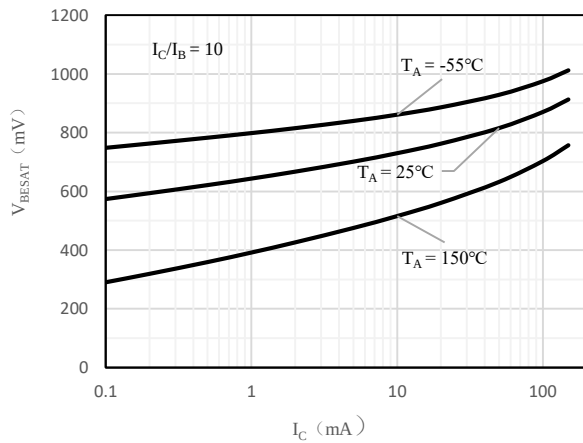


Fig 3 $V_{BE(sat)}$ vs. I_C

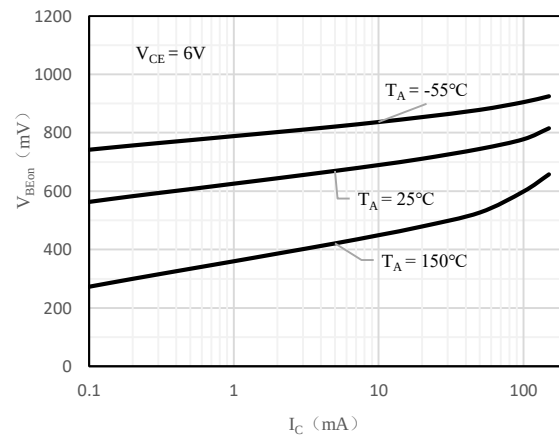


Fig 4 $V_{BE(on)}$ vs. I_C

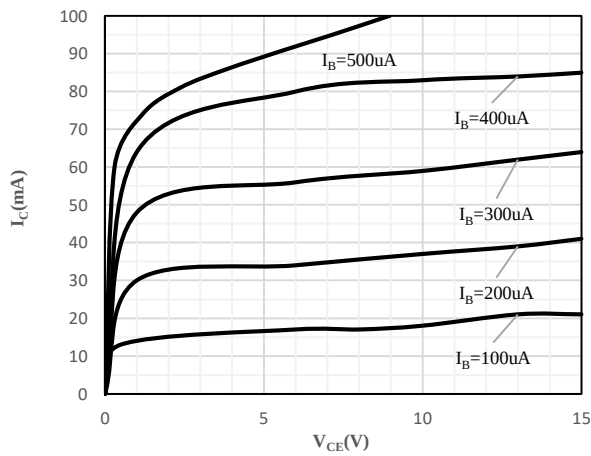


Fig 5 I_C vs. V_{CE}

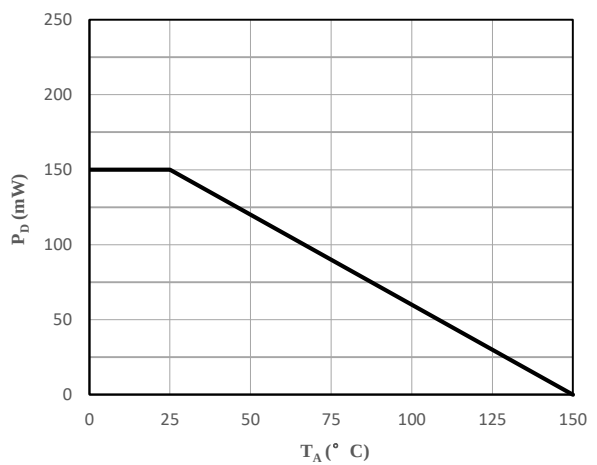


Fig 6 P_D vs. T_A

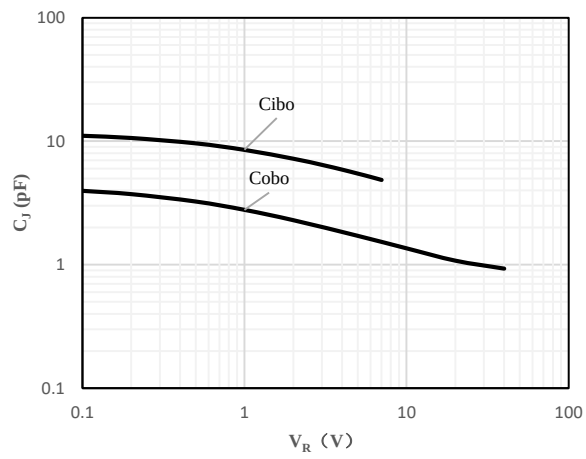
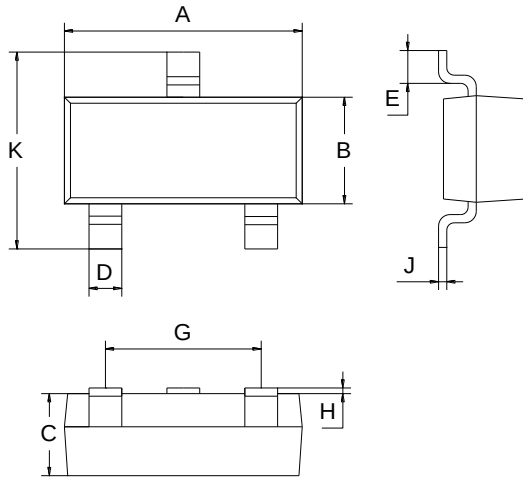


Fig 7 C_j vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

