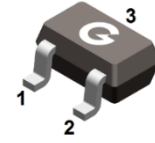
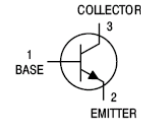


Features

- High current gain
- Excellent h_{FE} linearity
- RoHS compliant with Halogen-free

HF



SOT-323

Mechanical Data

- Case: SOT-323
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
KTC4075W-O	SOT-323	3000 pcs / Tape & Reel	LO
KTC4075W-Y	SOT-323	3000 pcs / Tape & Reel	LY
KTC4075W-GR	SOT-323	3000 pcs / Tape & Reel	LGR
KTC4075W-BL	SOT-323	3000 pcs / Tape & Reel	LBL

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

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

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	100	mW
Thermal Resistance Junction-to-Air ^{*1}	$R_{\theta JA}$	306	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case ^{*1}	$R_{\theta JC}$	152	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Lead ^{*1}	$R_{\theta JL}$	61	$^\circ\text{C/W}$
Operating Junction Temperature	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 15mm * 15mm * 1mm FR4-epoxy P.C.B

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-base 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	$V_{CE(sat)}$	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$	-	-	0.25	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$	80	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$	-	2.0	3.5	pF
Noise Figure	N_F	$V_{CE} = 6\text{V}$, $I_C = 0.1\text{mA}$ $f = 1\text{kHz}$, $R_G = 10\text{k}\Omega$	-	1.0	10	dB

Classification of h_{FE}

Rank	O	Y	GR	BL
Range	70-140	120-240	200-400	350-700
Marking	LO	LY	LGR	LBL

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

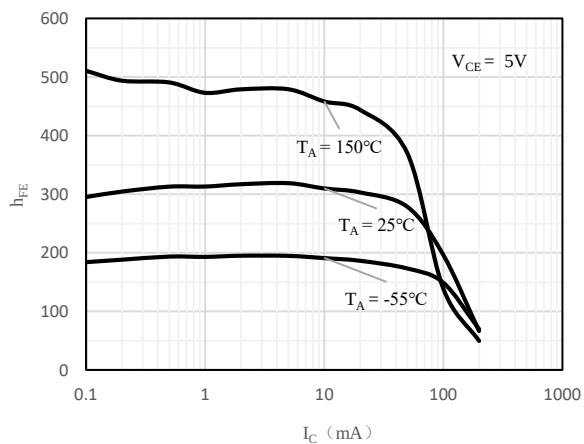


Fig 1 h_{FE} vs. I_C

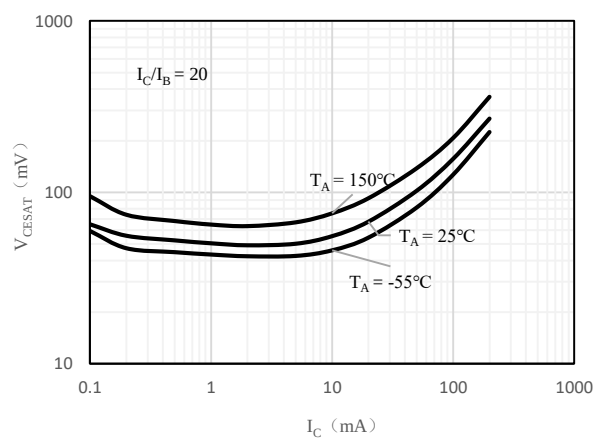


Fig 2 $V_{CE(sat)}$ vs. I_C

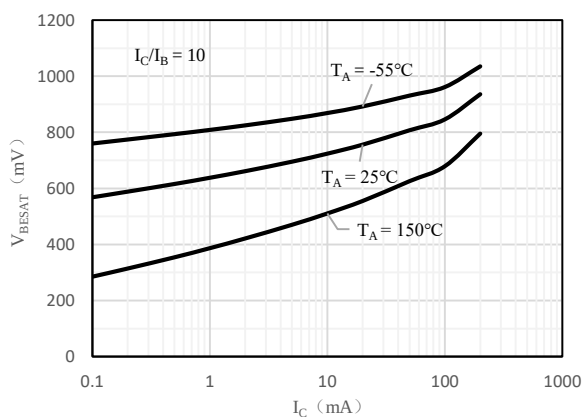


Fig 3 $V_{BE(sat)}$ vs. I_C

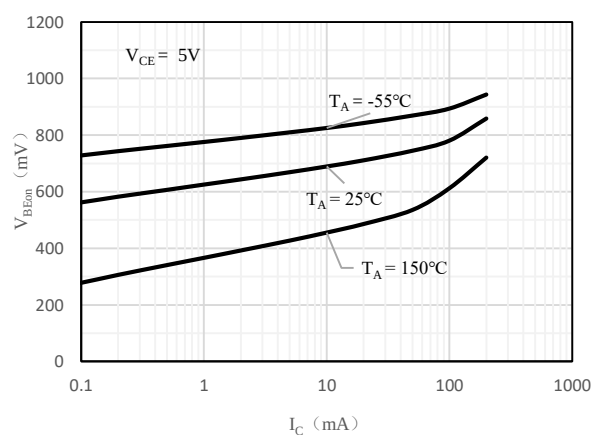
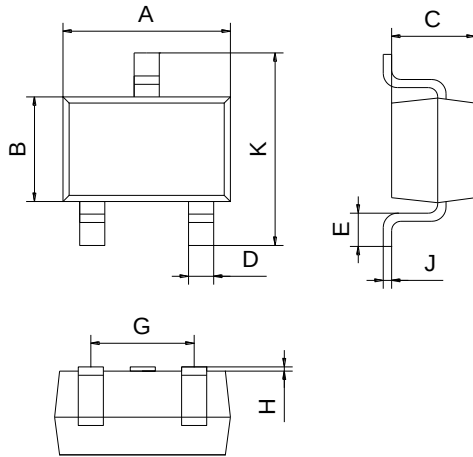


Fig 4 $V_{BE(on)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-323		
Dimension	Min.	Max.
A	2.00	2.20
B	1.15	1.35
C	0.90	1.10
D	0.15	0.35
E	0.25	0.40
G	1.20	1.40
H	0.02	0.10
J	0.05	0.15
K	2.20	2.40

Mounting Pad Layout (Unit: mm)

SOT-323

