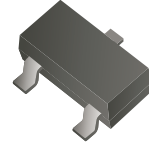


KTC3875GR-HF (NPN)

RoHS Device
Halogen Free



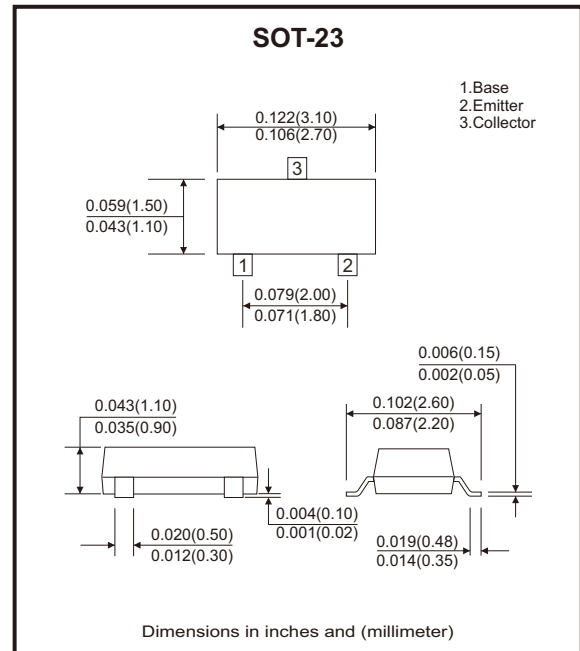
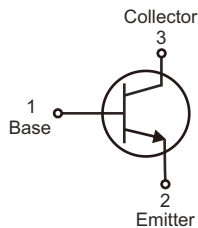
Features

- Excellent hFE linearity.
- Low noise.

Mechanical Data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

Circuit Diagram



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

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current-continuous	I_C	150	mA
Base current	I_B	30	mA
Collector power dissipation	P_C	150	mW
Junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage	$I_C = 100\mu A, I_E = 0$	$V_{(BR)CBO}$	60			V
Collector-emitter breakdown voltage	$I_C = 1mA, I_B = 0$	$V_{(BR)CEO}$	50			V
Emitter-base breakdown voltage	$I_E = 100\mu A, I_C = 0$	$V_{(BR)EBO}$	5			V
Collector cut-off current	$V_{CB} = 60V, I_E = 0$	I_{CBO}			0.1	μA
Emitter cut-off current	$V_{EB} = 5V, I_C = 0$	I_{EBO}			0.1	μA
DC current gain	$V_{CE} = 6V, I_C = 2mA$	h_{FE}	200		400	
Collector-emitter saturation voltage	$I_C = 100mA, I_B = 10mA$	$V_{CE(sat)}$		0.1	0.25	V
Transition frequency	$V_{CE} = 10V, I_C = 1mA$	f_T	80			MHz
Collector output capacitance	$V_{CB} = 10V, I_E = 0, f = 1MHz$	C_{ob}		2.0	3.5	pF
Noise figure	$V_{CE} = 6V, I_C = 0.1mA,$ $f = 1KHz, R_g = 10k\Omega$	NF		1.0	10	dB

Typical Rating and Characteristic Curves (KTC3875GR-HF)

Fig.1 - I_c — V_{CE}

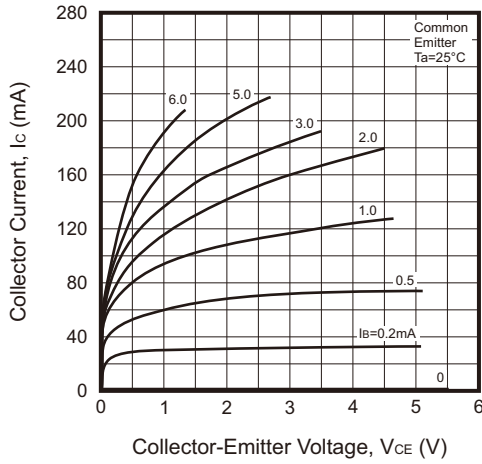


Fig.2 - h_{FE} — I_c

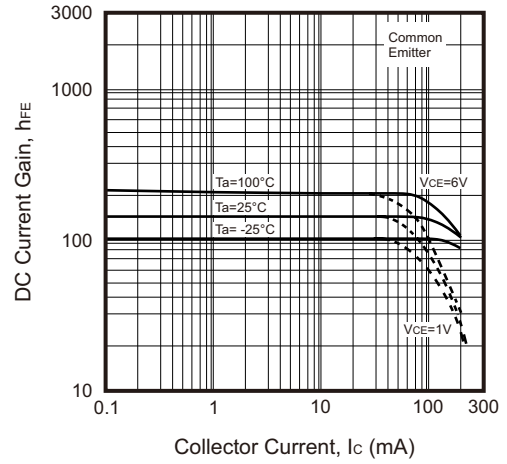


Fig.3 - $V_{CE(sat)}$ — I_c

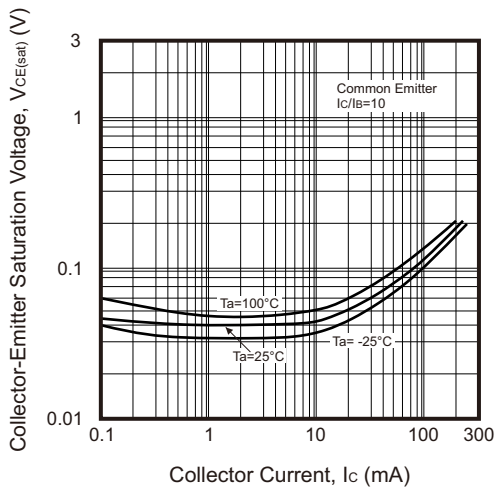


Fig.4 - $V_{BE(sat)}$ — I_c

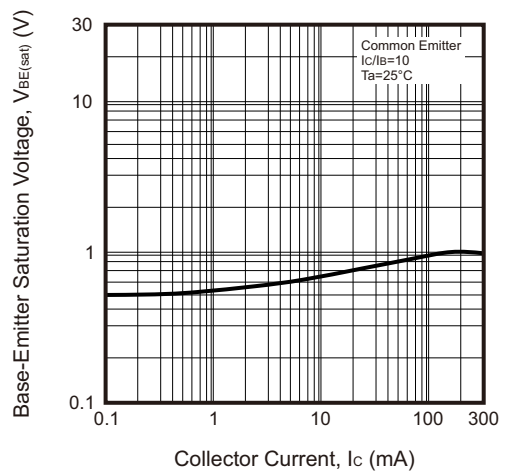
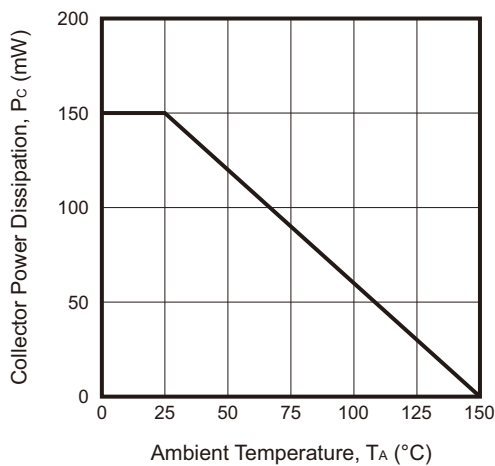
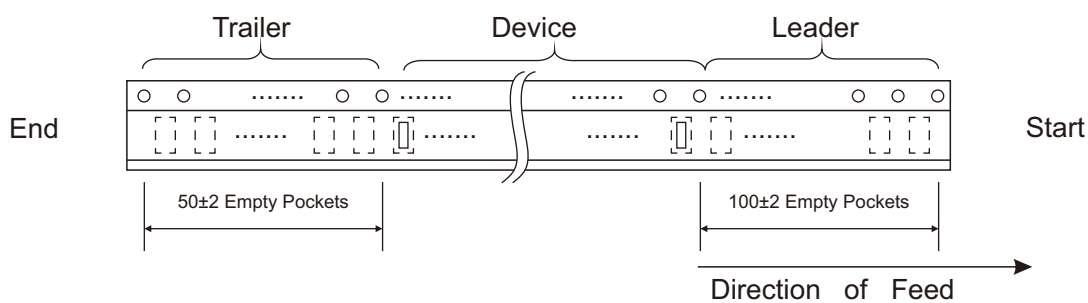
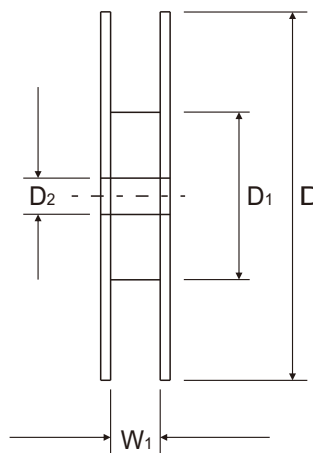
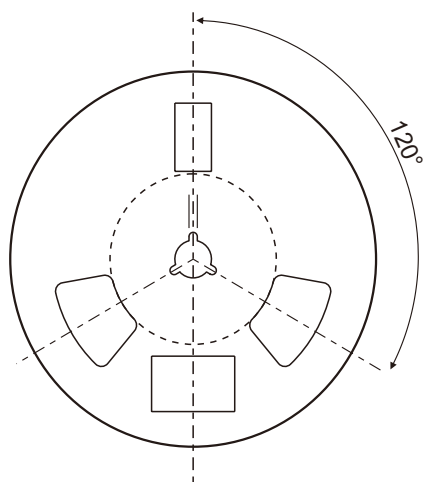
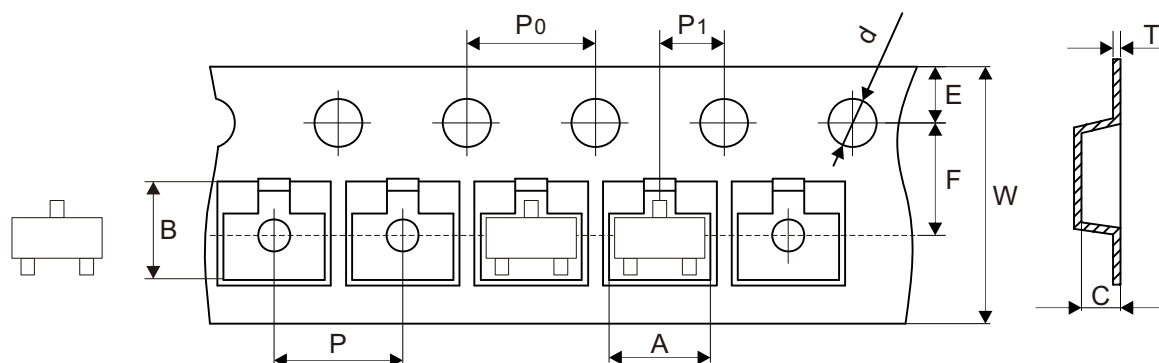


Fig.5 - P_c — T_A



Reel Taping Specification

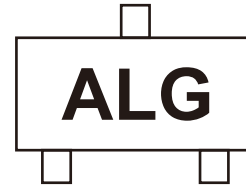


SOT-23	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

SOT-23	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 ± 0.30	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 ± 0.012	0.374 ± 0.039

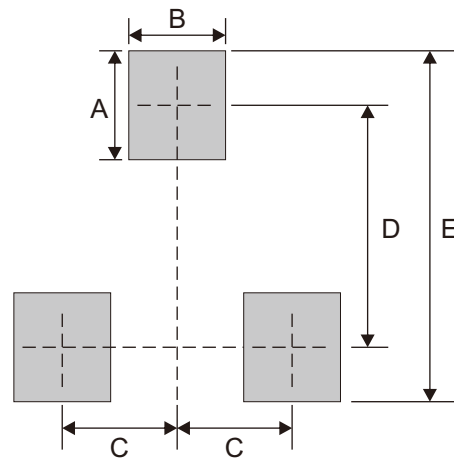
Marking Code

Part Number	Marking Code
KTC3875GR-HF	ALG



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7