



Epitaxial Planar NPN Transistor

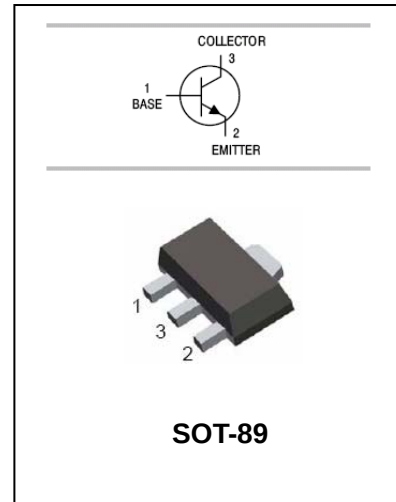
KTC4378

FEATURES

- High Voltage: $V_{CEO}=60V(\text{Min})$
- High Current: $I_C(\text{Max})=1A$
- Wide Area of Safe Operation



Lead-free



ORDERING INFORMATION

Type No.	Marking	Package Code
KTC4378	TY/TGR	SOT-89

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current DC	1	A
I_{CP}	Collector Current Pulse	2	A
P_C	Collector Power Dissipation	500	mW
P_C^*		1	W
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55 to +150	$^\circ\text{C}$

P_C^* : KTC4378 mounted on ceramic substrate(250mm²x0.8t)



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=50V, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$			100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=50mA$	100		320	
	$h_{FE(2)}$	$V_{CE}=2V, I_C=1A$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		0.15	0.5	V
Base-emitter v saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		0.85	1.2	V
Transition frequency	f_T	$V_{CE}=10V, I_C=50mA$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$		12		pF

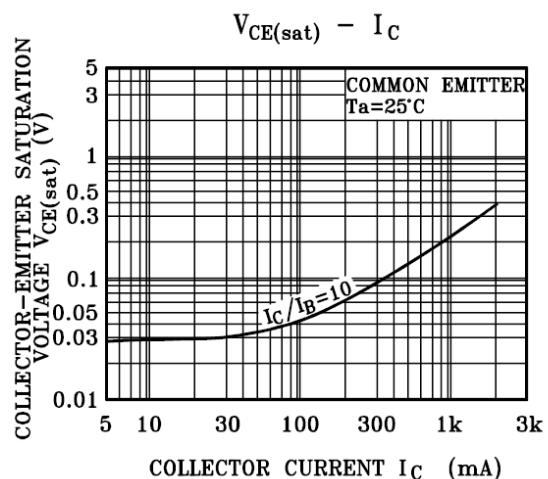
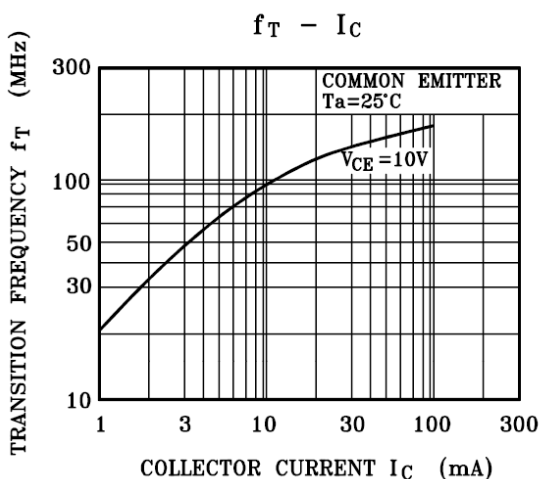
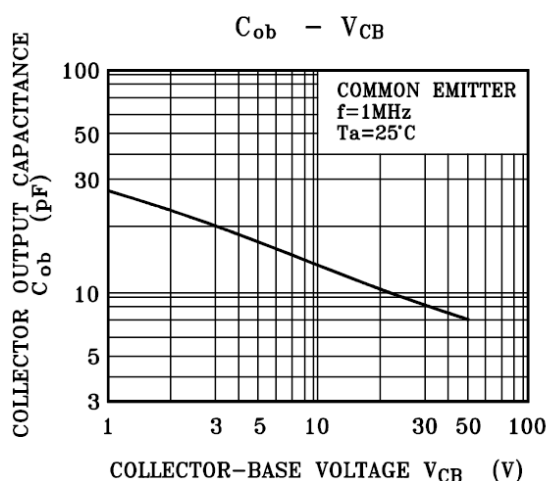
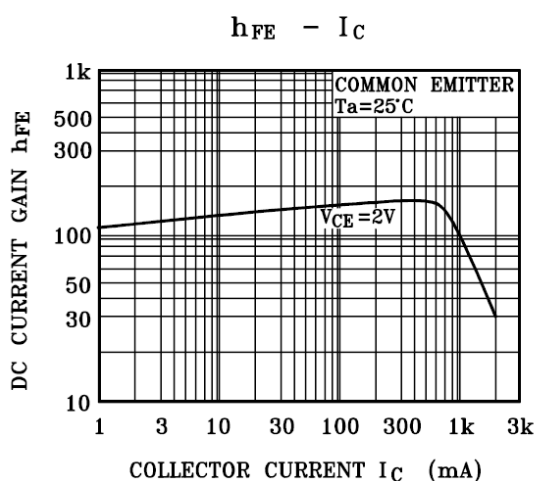
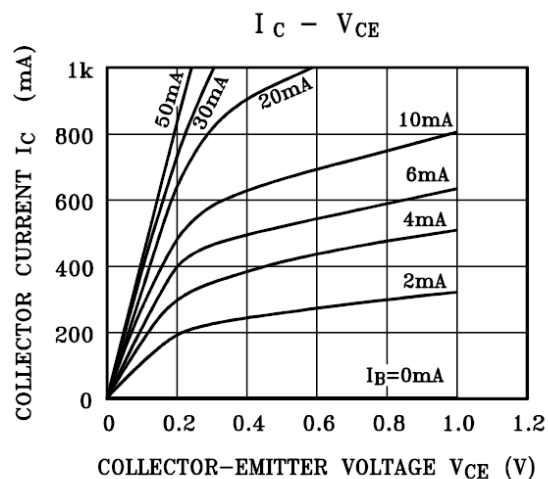
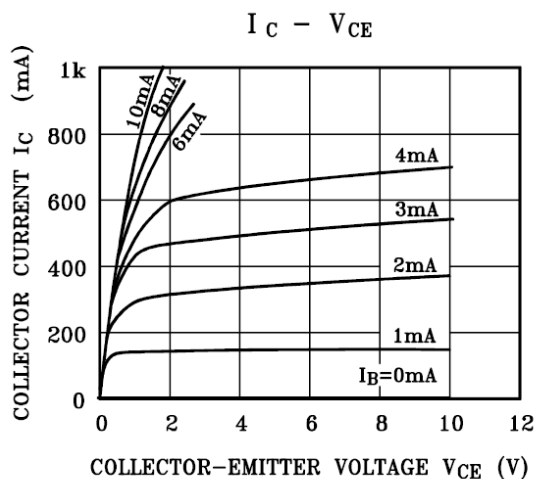
CLASSIFICATION OF $h_{FE(1)}$

Rank	Y	GR
Range	100-200	160-320
MARKING	TY	TGR

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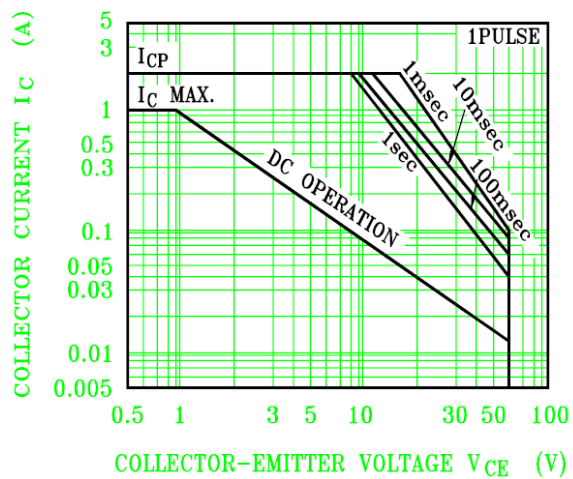
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



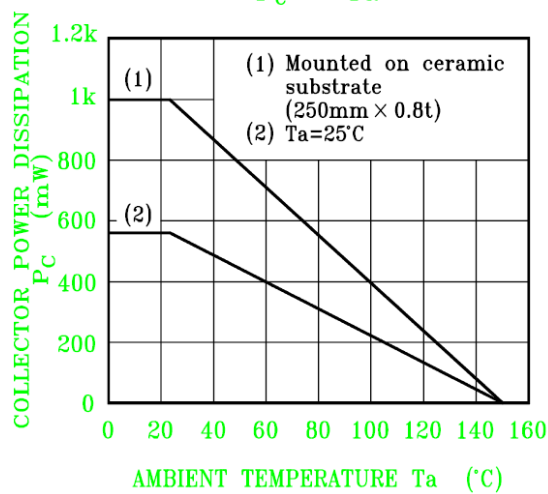
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SAFE OPERATING AREA



$P_C - T_a$



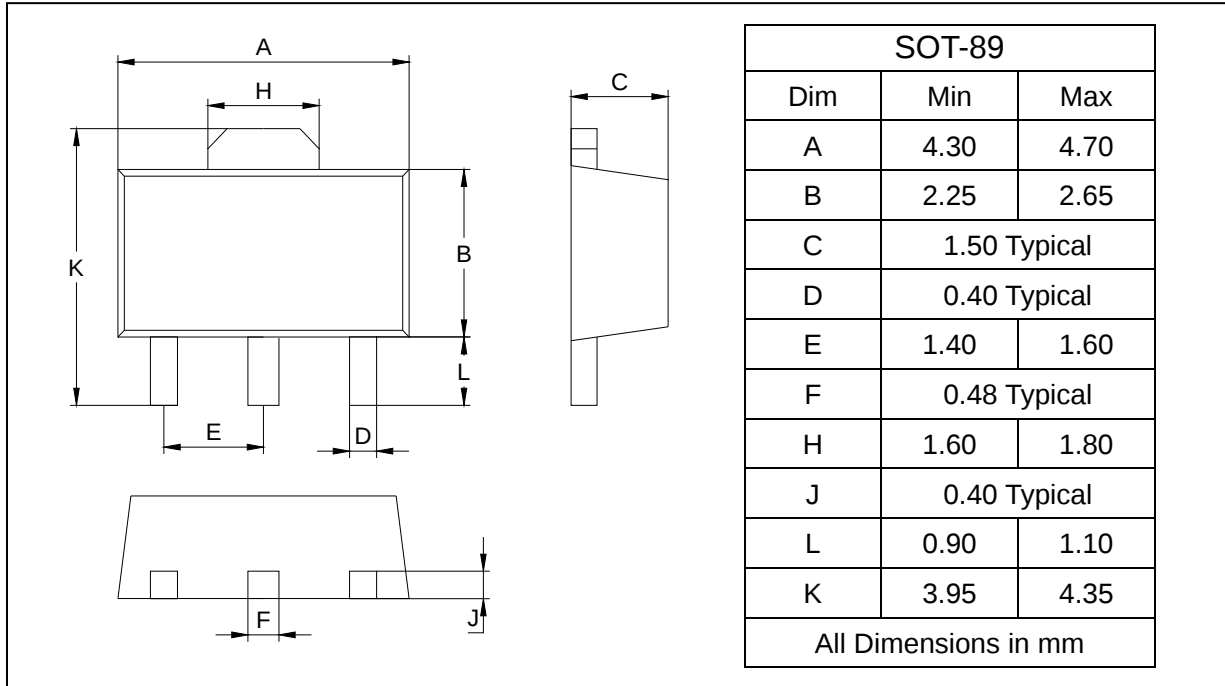
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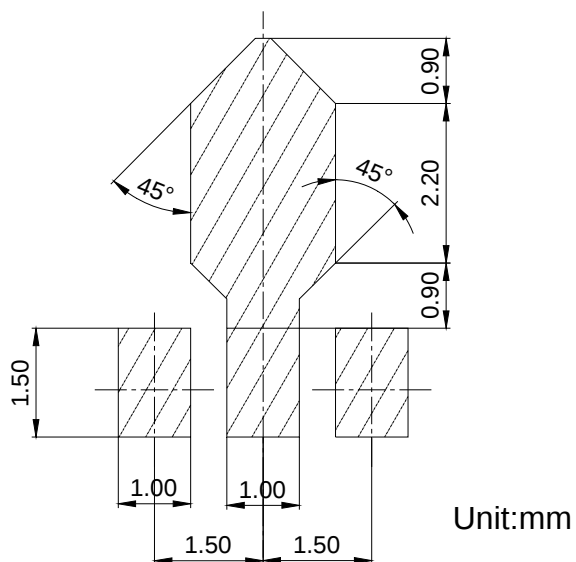
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
KTC4378	SOT-89	1000/Tape&Reel