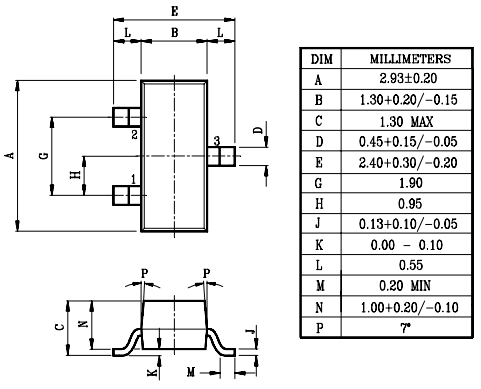
KTC3878

EPITAXIAL PLANAR NPN TRANSISTOR

HIGH FREQUENCY LOW NOISE AMPLIFIER APPLICATION.
HF, VHF AMPLIFIER APPLICATION.

FEATURE

- Low Noise Figure : NF=3.5dB(Max.) (f=1MHz).



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/−0.15
C	1.30 MAX
D	0.45+0.15/−0.05
E	2.40+0.30/−0.20
G	1.90
H	0.95
J	0.13+0.10/−0.05
K	0.00 − 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/−0.10
P	7°

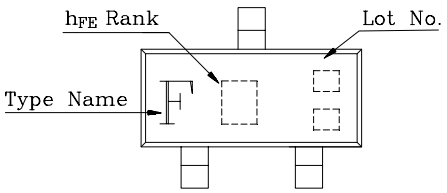
1. EMITTER
2. BASE
3. COLLECTOR

SOT−23

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	35	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	100	mA
Emitter Current	I_E	-100	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=20V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=2V, I_C=0	-	-	1.0	μA
DC Current Gain	h_{FE}(Note)	V_{CE}=12V, I_C=2mA	40	-	240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA	-	-	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=10mA, I_B=1mA	-	-	1.0	V
Transition Frequency	f_T	V_{CE}=10V, I_C=2mA	80	120	-	MHz
Reverse Transfer Capacitance	C_{re}	V_{CB}=10V, I_E=0, f=1MHz	-	2.2	3.0	pF
Collector-Base Time Constant	C_c·rbb′	V_{CE}=10V, I_E=-1mA, f=30MHz	-	30	50	pS
Noise Figure	NF	V_{CE}=10V, I_E=-1mA, f=1MHz, Rg=50Ω	-	2.0	3.5	dB

Note : h_{FE} Classification R:40~80 , O:70~140 , Y:120~240

y PARAMETERS (Typ.) (COMMON EMITTER V_{CE}=6V, I_E=-1mA, f=1MHz)

CHARACTERISTIC	SYMBOL	KTC3878-R	KTC3878-O	KTC3878-Y	UNIT
Input Conductance	g_{ie}	0.5	0.35	0.22	mS
Input Capacitance	C_{ie}	50	48	46	pF
Output Conductance	g_{oe}	4	5	6.5	μS
Output Capacitance	C_{oe}	3.7	3.4	3.2	pF
Forward Transfer Admittance	$\|y_{fe}\|$	36	36	36	mS
Phase Angle of Forward Transfer Admittance	θ_{fe}	-1.6	-1.6	-1.6	°
Reverse Transfer Admittance	$\|y_{re}\|$	14	14	14	μS
Phase Angle of Reverse Transfer Admittance	θ_{re}	-90	-90	-90	°