KTC4376 TRANSISTOR (NPN)

1.BASE

2.COLLECTOR

3.EMITTER

SOT-89

FEATURES

- Small Flat Package
- High Current Application
- Complementary to KTA1664

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

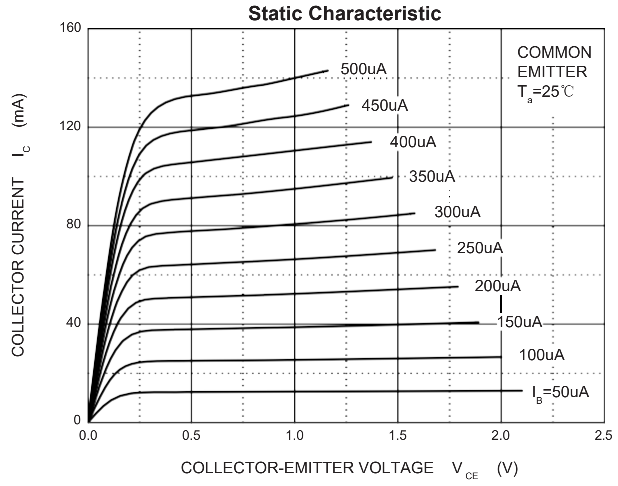
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	35	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	800	mA
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

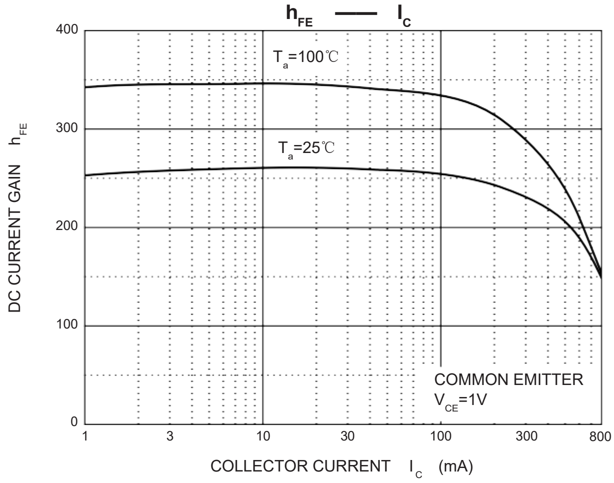
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

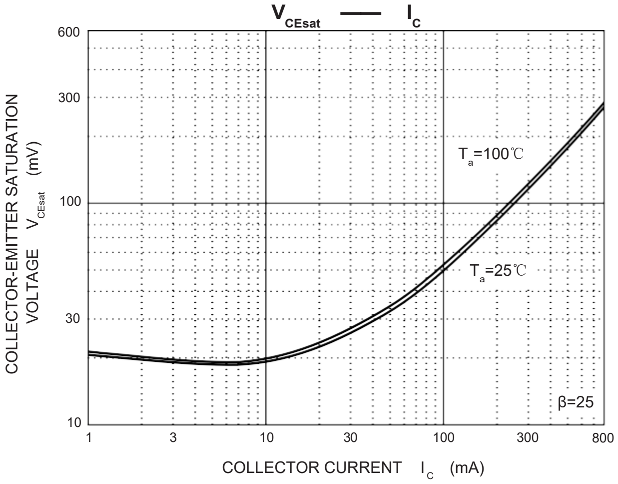
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=1mA,I_E=0	35			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA,I_B=0	30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=1mA,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=35V,I_E=0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			100	nA
DC current gain	$h_{FE(1)}$	V_{CE}=1V, I_C=100mA	100		320	
	$h_{FE(2)}$	V_{CE}=1V, I_C=700mA	35			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA,I_B=20mA			0.5	V
Base-emitter voltage	V_{BE}	V_{CE}=1V, I_C=10mA	0.5		0.8	V
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0, f=1MHz		13		pF
Transition frequency	f_T	V_{CE}=5V,I_C=10mA		120		MHz

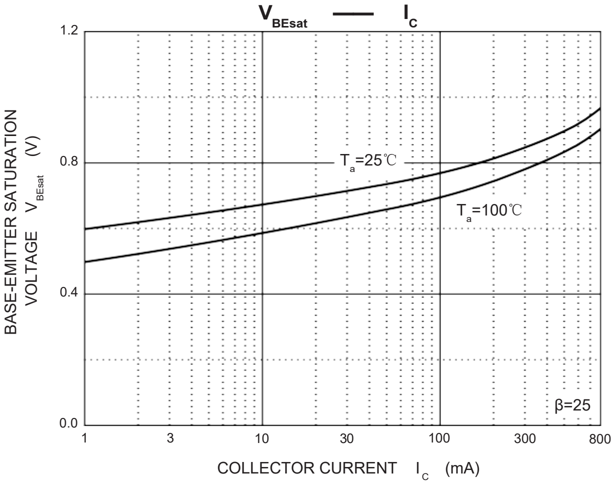
CLASSIFICATION OF $h_{FE(1)}$

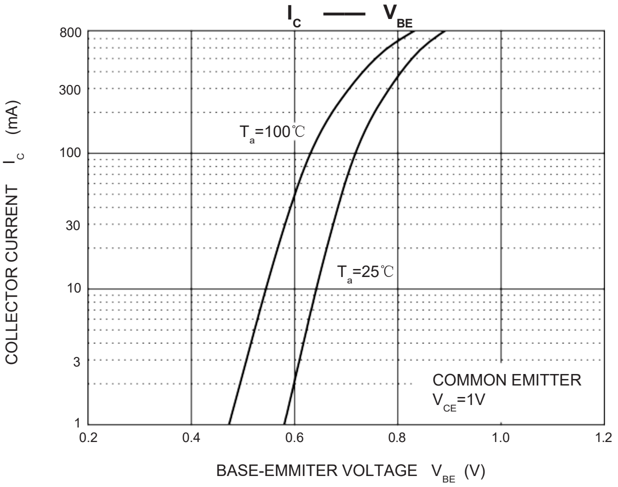
RANK	O	Y
RANGE	100 - 200	160 - 320
MARKING	**PO**	**PY**

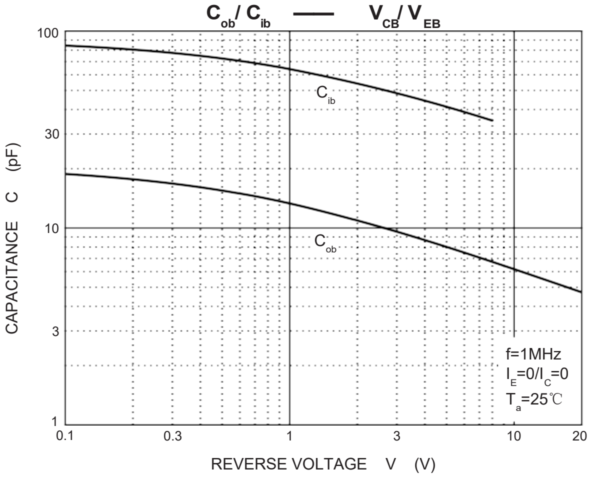

Static Characteristic
COMMON EMITTER
T_a=25℃
500uA
450uA
400uA
350uA
300uA
250uA
200uA
150uA
100uA
I_B=50uA
COLLECTOR CURRENT I_C (mA)
160
120
80
40
0
0.0
0.5
1.0
1.5
2.0
2.5
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

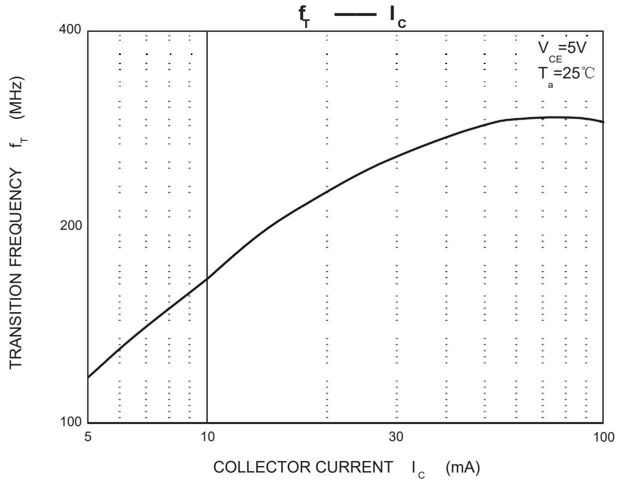

h_{FE} — I_C
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=1V
DC CURRENT GAIN h_{FE}
400
300
200
100
0
1
3
10
30
100
300
800
COLLECTOR CURRENT I_C (mA)

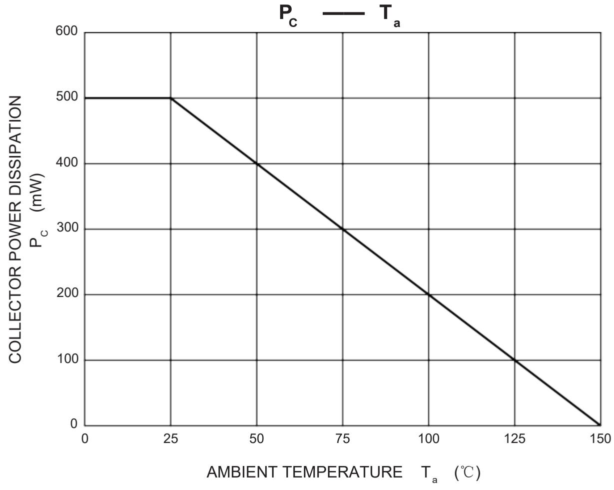

V_{CEsat} — I_C
T_a=100℃
T_a=25℃
β=25
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
600
300
100
30
10
1
3
10
30
100
300
800
COLLECTOR CURRENT I_C (mA)


V_{BEsat} — I_C
T_a=25℃
T_a=100℃
β=25
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (V)
1.2
0.8
0.4
0.0
1
3
10
30
100
300
800
COLLECTOR CURRENT I_C (mA)


I_C — V_{BE}
T_a=100℃
T_a=25℃
COMMON EMITTER
V_{CE}=1V
COLLECTOR CURRENT I_C (mA)
800
300
100
30
10
3
1
0.2
0.4
0.6
0.8
1.0
1.2
BASE-EMMITER VOLTAGE V_{BE} (V)


C_{ob} / C_{ib} — V_{CB} / V_{EB}
C_{ib}
C_{ob}
f=1MHz
I_E=0/I_C=0
T_a=25℃
CAPACITANCE C (pF)
100
30
10
3
1
0.1
0.3
1
3
10
20
REVERSE VOLTAGE V (V)


f_T — I_C
V_{CE}=5V
T_a=25℃
TRANSITION FREQUENCY f_T (MHz)
400
200
100
5
10
30
100
COLLECTOR CURRENT I_C (mA)


P_C — T_a
COLLECTOR POWER DISSIPATION P_C (mW)
600
500
400
300
200
100
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE T_a (℃)