2SC3650 TRANSISTOR (NPN)

1.BASE
2.COLLECTOR
3.EMITTER

SOT-89

FEATURES

- Small Flat Package
- High DC Current Gain
- Low $V_{CE(sat)}$
- Large Current Capacity

APPLICATIONS

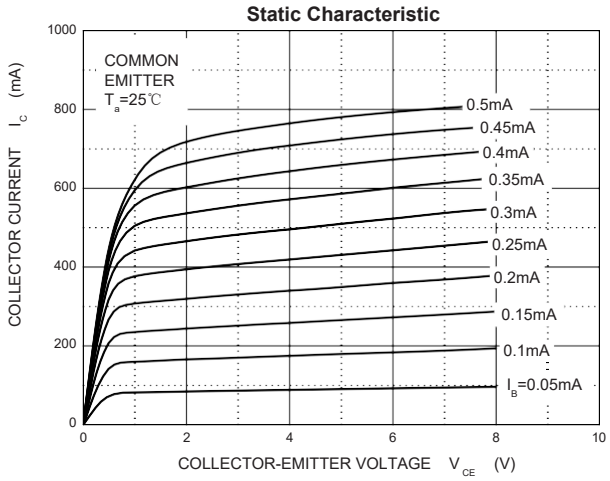
- LF Amplifiers, Various Drivers, Muting Circuit

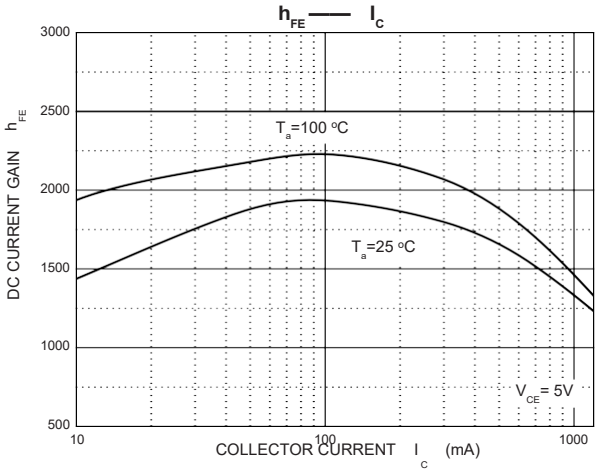
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

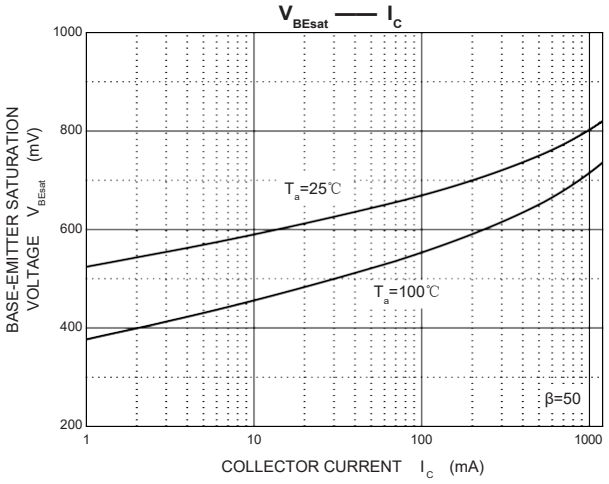
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	15	V
I_C	Collector Current	1.2	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

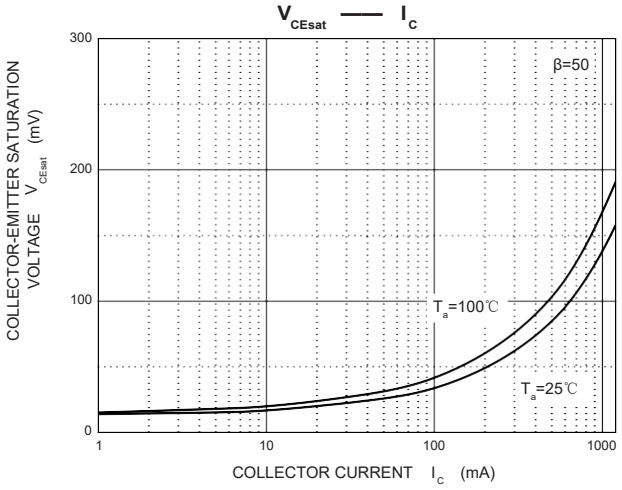
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

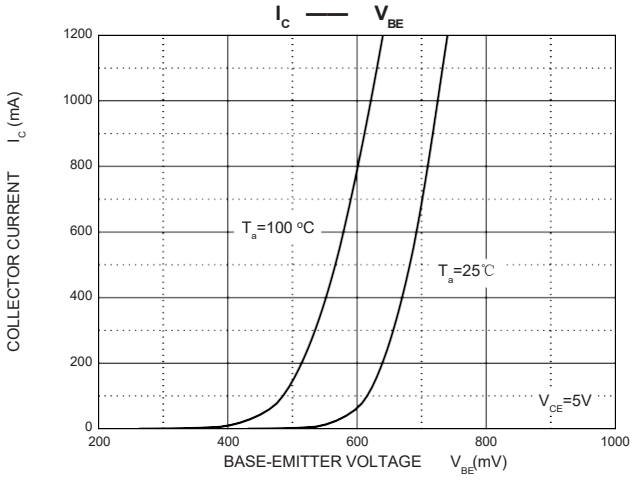
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	15			V
Collector cut-off current	I_{CBO}	V_{CB}=20V,I_E=0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=10V,I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$	V_{CE}=5V, I_C=500mA	800		3200	
	$h_{FE(2)}$	V_{CE}=5V, I_C=10mA	600			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500mA,I_B=10mA			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=500mA,I_B=10mA			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		17		pF

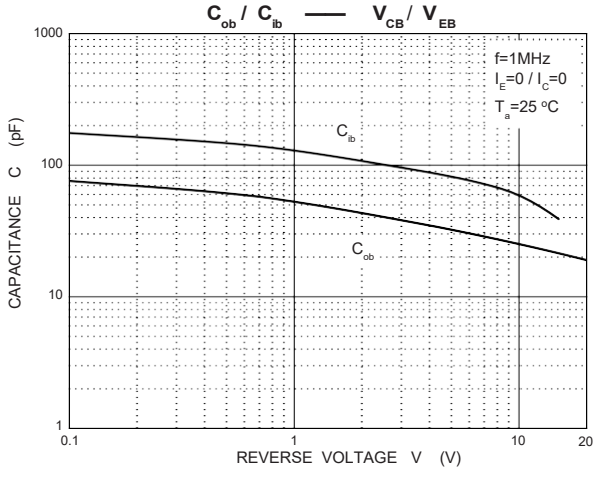

Static Characteristic
COMMON EMITTER
T_a=25℃
0.5mA
0.45mA
0.4mA
0.35mA
0.3mA
0.25mA
0.2mA
0.15mA
0.1mA
I_B=0.05mA
COLLECTOR CURRENT I_C (mA)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

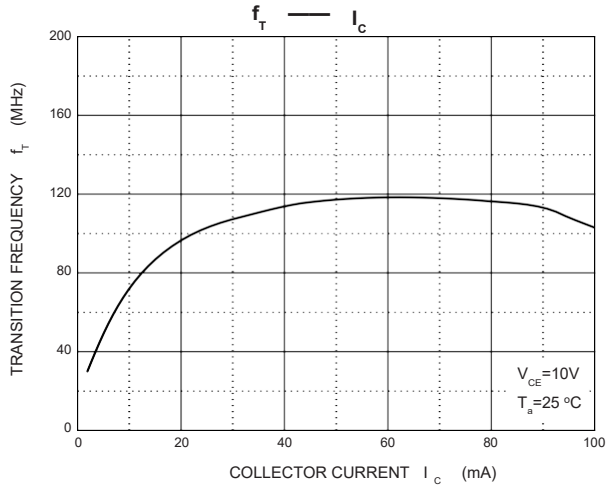

h_{FE} —— I_C
T_a=100 ºC
T_a=25 ºC
V_{CE}= 5V
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (mA)

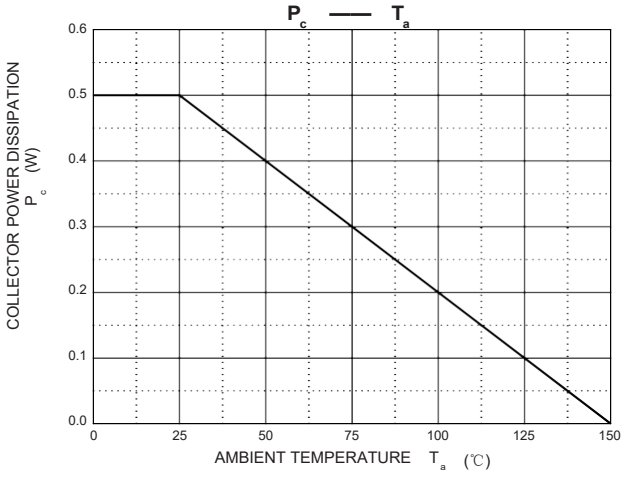

V_{BEsat} —— I_C
T_a=25℃
T_a=100℃
β=50
BASE-EMITTER SATURATION VOLTAGE V_{BEsat} (mV)
COLLECTOR CURRENT I_C (mA)


V_{CEsat} —— I_C
β=50
T_a=100℃
T_a=25℃
COLLECTOR-EMITTER SATURATION VOLTAGE V_{CEsat} (mV)
COLLECTOR CURRENT I_C (mA)


I_C —— V_{BE}
T_a=100 ºC
T_a=25℃
V_{CE}=5V
COLLECTOR CURRENT I_C (mA)
BASE-EMITTER VOLTAGE V_{BE}(mV)


C_{ob} / C_{ib} —— V_{CB} / V_{EB}
f=1MHz
I_E=0 / I_C=0
T_a=25 ºC
C_{ib}
C_{ob}
CAPACITANCE C (pF)
REVERSE VOLTAGE V (V)


f_T —— I_C
V_{CE}=10V
T_a=25 ºC
TRANSITION FREQUENCY f_T (MHz)
COLLECTOR CURRENT I_C (mA)


P_c —— T_a
COLLECTOR POWER DISSIPATION P_c (W)
AMBIENT TEMPERATURE T_a (℃)