Elektronische Bauelemente

2SC3838

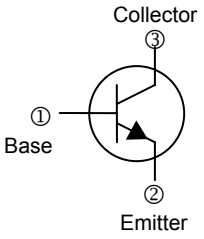
50 mA, 20 V

NPN Plastic Encapsulated Transistor

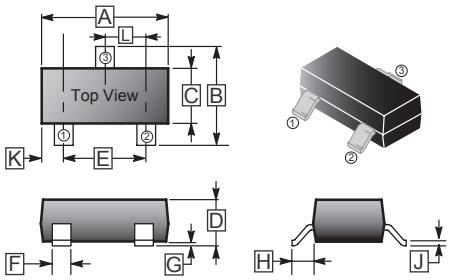
RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- High transition frequency
- Small $r_{bb}'\cdot C_c$ and high gain
- Small NF



SOT-23



REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	2.80	3.00	G	0.10 REF.	
B	2.25	2.55	H	0.55 REF.	
C	1.20	1.40	J	0.08	0.15
D	0.90	1.15	K	0.5 REF.	
E	1.80	2.00	L	0.95 TYP.	
F	0.30	0.50			

PACKAGE INFORMATION

Weight: 0.0078g (Approximately)

MARKING

AD

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	11	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current - Continuous	I_C	50	mA
Collector Power Dissipation	Pc	100	mW
Junction, Storage Temperature	T_J, T_{STG}	+150, -55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20	-	-	V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	11	-	-	V	I_C= 1mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	3	-	-	V	I_E=10μA, I_C=0
Collector Cut-Off Current	I_{CBO}	-	-	0.5	μA	V_{CB}=10V, I_E=0
Emitter Cut-Off Current	I_{EBO}	-	-	0.5	μA	V_{EB}= 2V, I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	500	mV	I_C=-10mA, I_B= 5mA
DC Current Gain	h_{FE}	56	-	180		V_{CE}= 10V, I_C=5mA
Transition Frequency	f_T	1.4	-	-	GHz	V_{CE}=10V, I_C= 10mA, f = 500MHz
Output Capacitance	Cob	-	-	1.5	pF	V_{CB}=10V, I_E=0A, f=1MHz
Collector-Base Time Constant	$r_{bb}'\cdot C_c$	-	-	12	pS	I_C=10mA,V_{CB}=10V, f=31.8MHz
Noise Figure	F	-	3.5	-	dB	V_{CE}=6V, I_C= 2mA, f = 500MHz, Rs = 50Ω

CLASSIFICATION OF h_{FE}

Rank	N	P
Range	56 - 120	82 - 180

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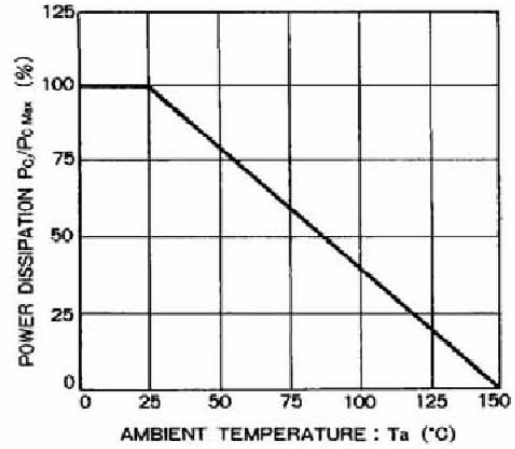
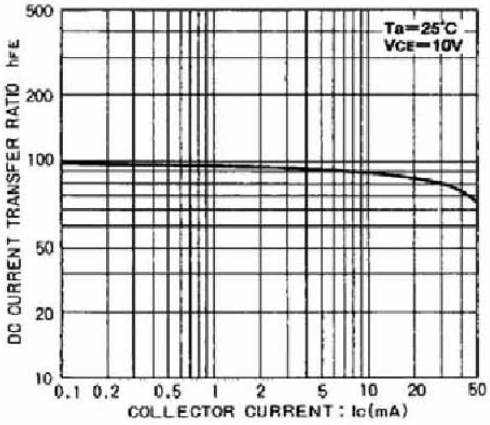
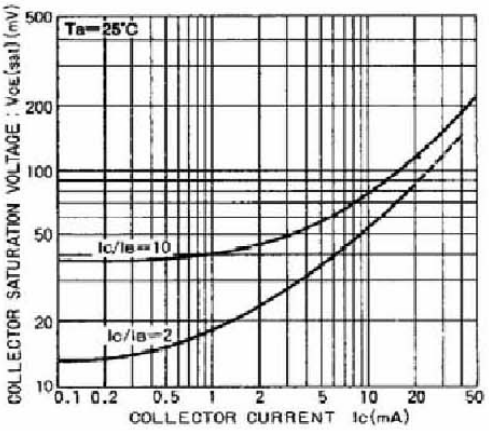
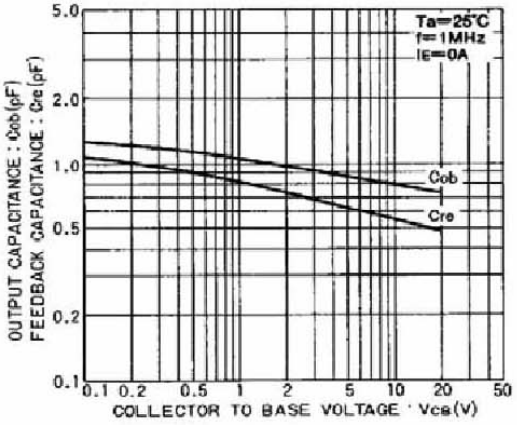
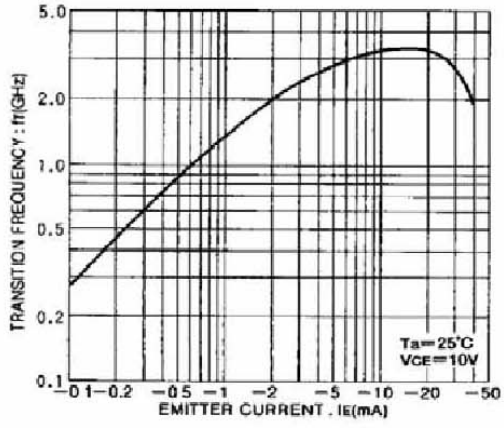
CHARACTERISTIC CURVES

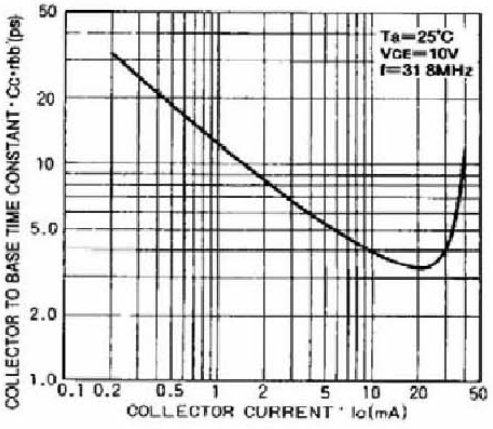












CHARACTERISTIC CURVES (cont'd)