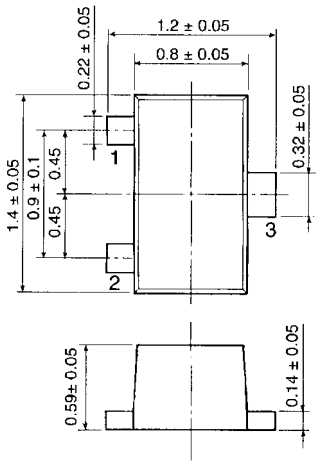
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANER TYPE

MT3S36T

VCO OSCILLETOR STAGE
UHF LOW NOISE AMPLIFIER APPLICATION

Unit: mm



1. BASE
2. EMITTER
3. COLLECTOR

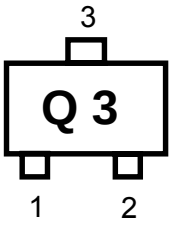
TESM	
JEDEC	—
JEITA	—
TOSHIBA	2-1B1A

Weight:0.0022g (typ.)

FEATURES

- Low Noise Figure :NF=1.3dB (@f=2GHz)
- High Gain:$|S21e|^2$=12.5dB (@f=2GHz)

Marking



Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-Base voltage	V_{CBO}	8	V
Collector-Emitter voltage	V_{CEO}	4.5	V
Emitter-Base voltage	V_{EBO}	1.5	V
Collector-Current	I_C	36	mA
Base-Current	I_B	18	mA
Collector Power dissipation	P_C	100	mW
Junction temperature	T_j	150	°C
Storage temperature Range	T_{stg}	−55~150	°C

Microwave Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Transition Frequency	fT	V_{CE}=3V, I_C=15mA, f=2GHz	15	19	-	GHz
Insertion Gain	$\|S21e\|^2$(1)	V_{CE}=3V, I_C=15mA, f=1GHz	15	17.5	-	dB
	$\|S21e\|^2$(2)	V_{CE}=3V, I_C=15mA, f=2GHz	10	12.5	-	dB
Noise Figure	NF(1)	V_{CE}=3V, I_C=3mA, f=1GHz	-	1.1	-	dB
	NF(2)	V_{CE}=3V, I_C=3mA, f=2GHz	-	1.3	1.8	dB

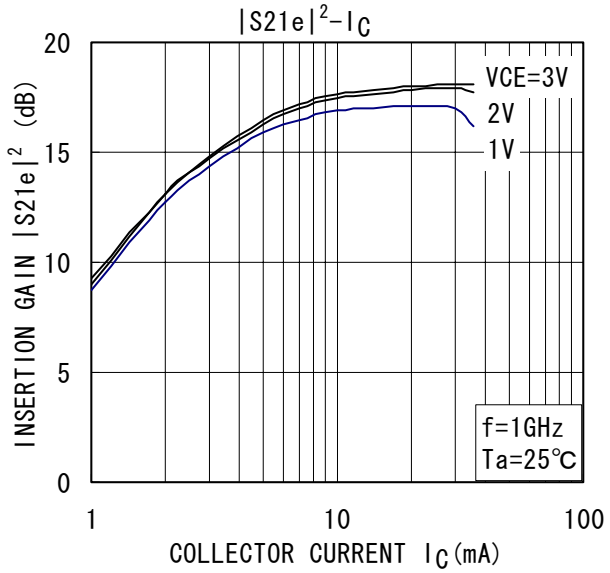
Electrical Characteristics (Ta = 25°C)

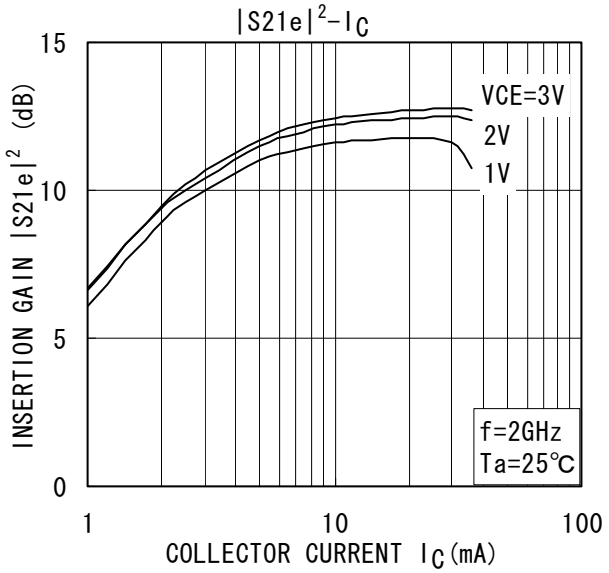
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector Cut-off Current	I_{CBO}	V_{CB}=8V, I_E=0	-	-	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=1V, I_C=0	-	-	1	μA
DC Current Gain	hFE	V_{CE}=3V, I_C=10mA	70	-	140	-
Output Capacitance	C_{ob}	V_{CB}=1V, I_E=0, f=1MHz	-	0.55	0.85	pF
Reverse Transistor Capacitance	C_{re}	V_{CB}=1V, I_E=0, f=1MHz (Note 1)	-	0.26	0.5	pF

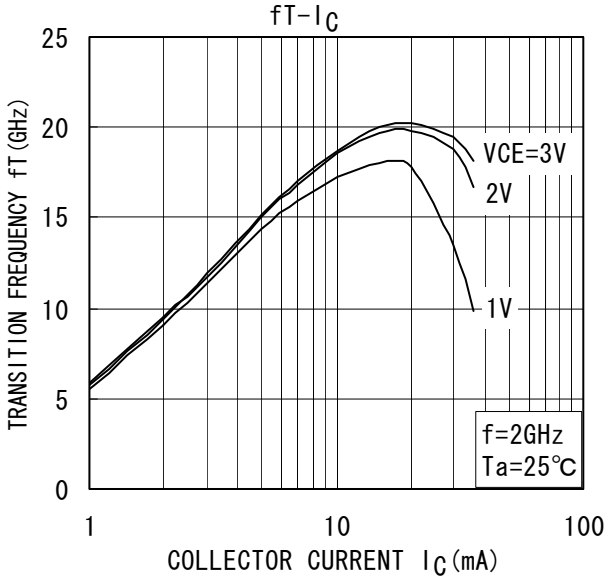
Note 1: Cre is measured by 3 terminal method with capacitance bridge.

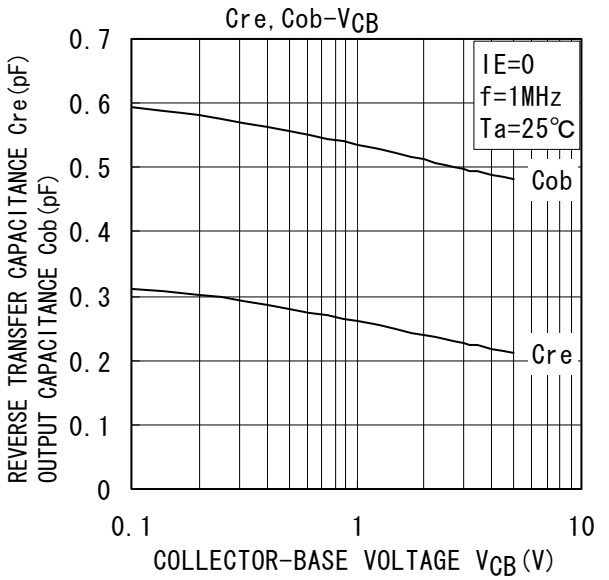
Caution: This device is sensitive to electrostatic discharge.

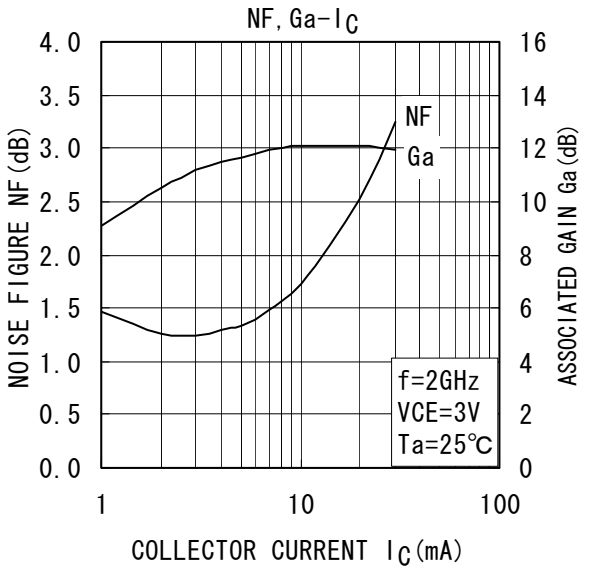
Please make enough tool and equipment earthed when you handle.

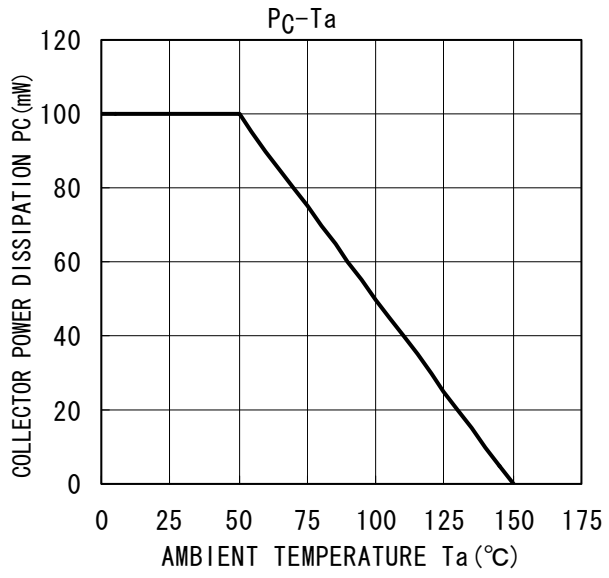












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