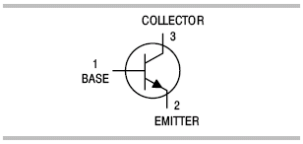
NPN Silicon Epitaxial Planar Transistor

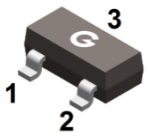
T2SC2412

Features

HF

- Epitaxial planar die construction
- Complementary to T2SA1037
- Halogen free
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards





SOT-23

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
T2SC2412-Q	SOT-23	3000 pcs / Tape & Reel	BQ
T2SC2412-R	SOT-23	3000 pcs / Tape & Reel	BR
T2SC2412-S	SOT-23	3000 pcs / Tape & Reel	BS

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	60	V
Collector-Emitter Breakdown Voltage	V_{CEO}	50	V
Emitter-Base Breakdown Voltage	V_{EBO}	7	V
Continuous Collector Current	I_C	150	mA
Peak Collector Current	I_{CM}	200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation(T_A = 25°C)	P_D	200	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	420	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	250	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	180	°C/W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a minimum recommended FR-4 board

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 50μA, I_E = 0	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 50μA, I_C = 0	7	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, I_E = 0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 7V, I_C = 0	-	-	0.1	μA
DC Current Gain	h_{FE}	V_{CE} = 6V, I_C = 1mA	120	-	560	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	0.4	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	1.2	V
Transition Frequency	f_T	I_C = 2mA, V_{CE} = 12V f = 100MHz	-	180	-	MHz
Output Capacitance	C_{ob}	V_{CB} =12V , I_E = 0A , f = 1MHz	-	2	3.5	pF

Classification of h_{FE}

Rank	Q	R	S
Range	120-270	180-390	270-560
Marking	BQ	BR	BS

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

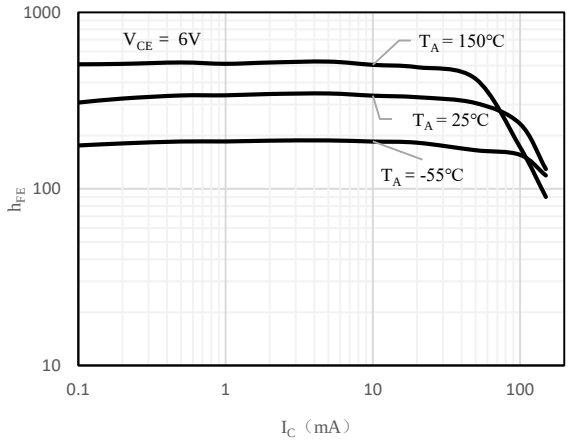


Fig 1 h_{FE} vs. I_C (R)

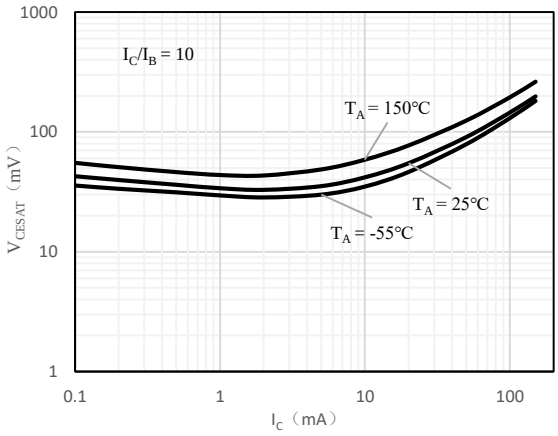


Fig 2 $V_{CE(sat)}$ vs. I_C

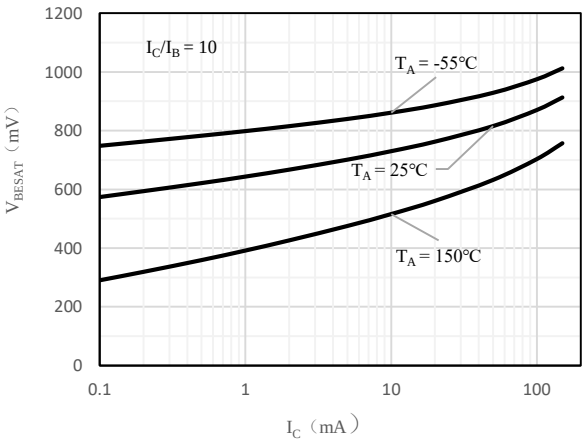


Fig 3 $V_{BE(sat)}$ vs. I_C

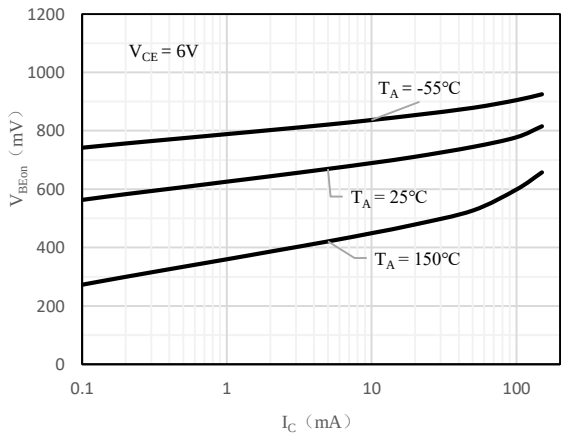
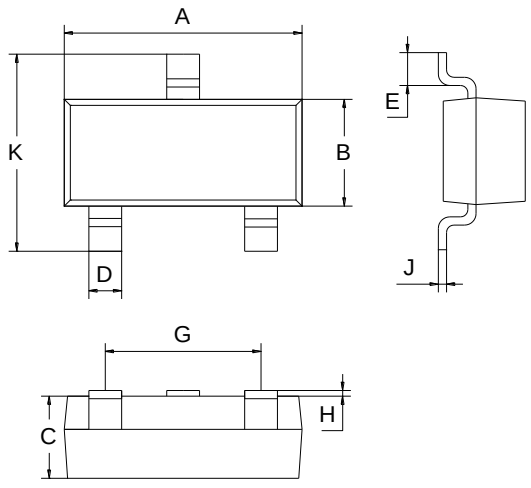


Fig 4 $V_{BE(ON)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

