



SOT-923 Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

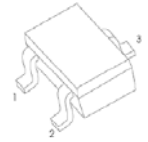
FEATURES

- **Pb-Free package is available**
RoHS product for packing code suffix "G"
Halogen free product for packing code suffix "H"
Moisture Sensitivity Level 1

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current	200	mA
P _C	Collector Power Dissipation	100	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	1250	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

SOT - 923



1. BASE
2. EMITTER
3. COLLECTOR Emitter

MARKING:1N

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

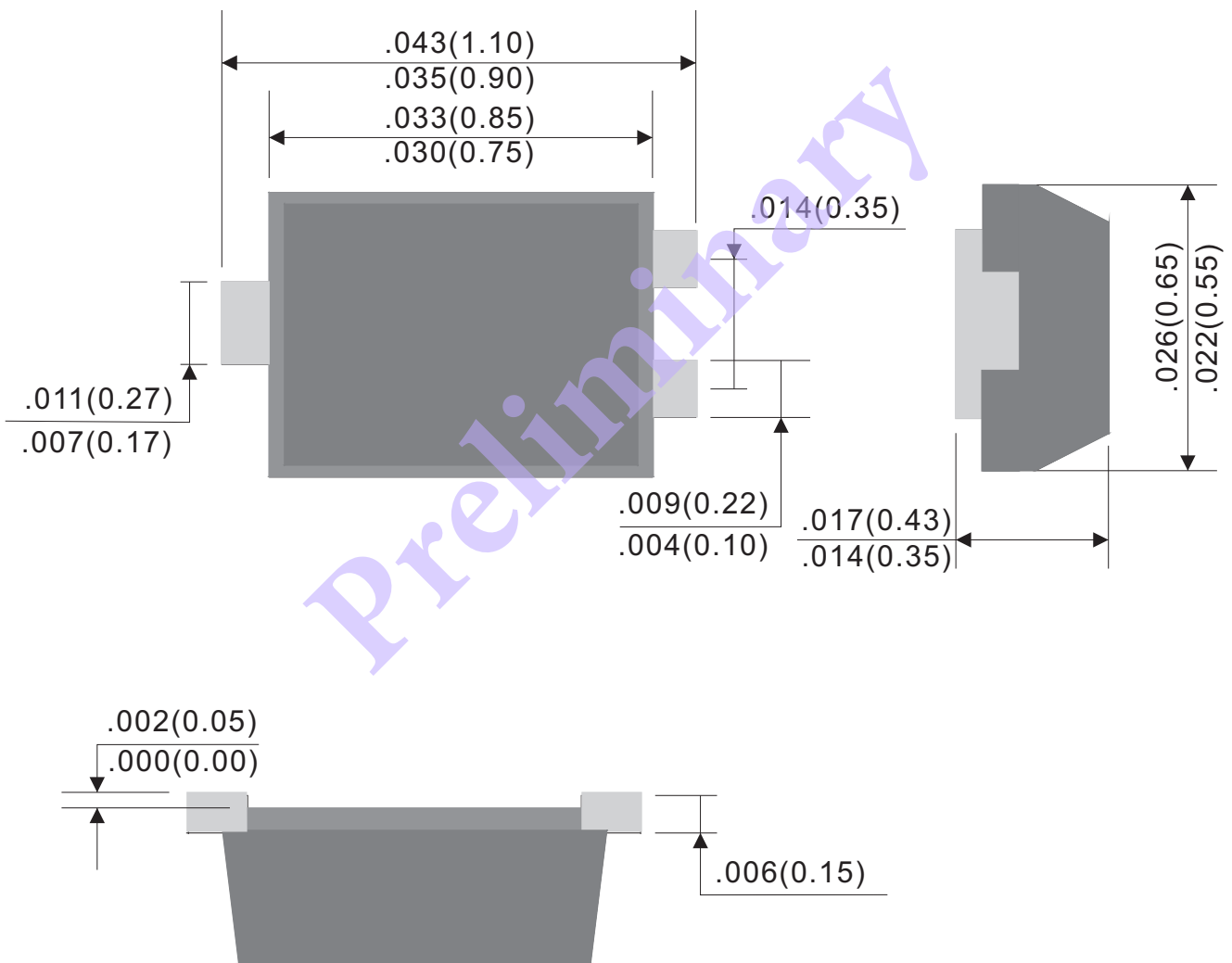
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	60			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	40			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			100	nA
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{BE(off)} =3.0V			50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			100	nA
DC current gain	h _{FE}	V _{CE} =1V, I _C =0.1mA	40			
		V _{CE} =1V, I _C =1mA	70			
		V _{CE} =1V, I _C =10mA	100		300	
		V _{CE} =1V, I _C =50mA	60			
		V _{CE} =1V, I _C =100mA	30			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =10mA, I _B =1mA			0.2	V
		I _C =50mA, I _B =5mA			0.3	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =10mA, I _B =1mA	0.65		0.85	V
		I _C =50mA, I _B =5mA			0.95	V
Transition frequency	f _T	V _{CE} =20V, I _C =10mA, f=100MHz	300			MHz
Collector output capacitance	C _{ob}	V _{CB} =5V, I _E =0, f=1MHz			6	pF
Collector output capacitance	C _{ib}	V _{EB} =0.5V, I _E =0, f=1MHz			15	pF
Delay time	t _d	V _{CC} =3V, I _C =10mA, I _{B1} =I _{B2} =1mA			35	ns
Rise time	t _r				35	ns
Storage time	t _s				200	ns

CLASSIFICATION OF h_{FE}

Rank	O	Y
Range	100-200	200-300

Outline Drawing

SOT-923



Dimensions in inches and (millimeters)

Rev.A

Ordering Information:

Device PN	Packing
MMBT3904S x ⁽²⁾ LT1 G ⁽¹⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(2) CLASSIFICATION OF hFE RANK

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