

GSTMMDT3904X6F

NPN General Purpose Transistor

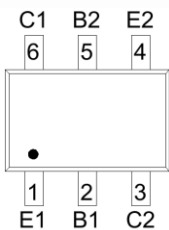
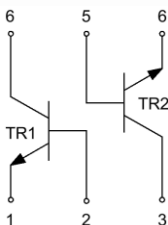
Product Description

This device is designed for amplifier and switching applications.

Features

- SOT-323 package design
- Epoxy meets UL 94 V-0 flammability rating
- RoHS Compliant and Halogen Free

Packages & Pin Assignments

SOT-363		Equivalent Circuit	
 Top View			
Pin	Description	Pin	Description
1	Emitter 1	4	Emitter 2
2	Base 1	5	Base 2
3	Collector 2	6	Collector 1

Ordering and Marking Information

Ordering Information					
Part Number	Package	Marking Code	Quantity/Reel		
GSTMMDT3904X6F	SOT-363	K6N	3,000 PCS		
GSTMMDT3904 1 2					
- Product Code: GSTMMDT3904	- Package Code: 1 is X6 for SOT-363	- Green Level: F for RoHS Compliant and Halogen Free			
Marking Information					
K6N					
- Product Code: K6N					

Absolute Maximum Ratings (T_A=25°C unless Otherwise Noted)

Symbol	Conditions	Value	Unit
V _{CEO}	Collector-Emitter Voltage	40	V
V _{CBO}	Collector-Base Voltage	60	V
V _{EBO}	Emitter-Base Voltage	5	V
I _{C(DC)}	Collector Current (DC)	200	mA
P _D	Power Dissipation	200	mW
R _{θJA}	Thermal Resistance Junction to Ambient	625	°C/W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Symbol	Conditions	Min	Max	Unit
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (I _C =1.0mA, I _B =0mA)	40	-	V
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _C =10μA, I _E =0mA)	60	-	V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage (I _E =10μA, I _C =0mA)	5	-	V
I _{CBO}	Collector-Base Cutoff Current (V _{CB} =30V, I _E =0mA)	-	50	nA
I _{CEX}	Collector-Emitter Cutoff Current (V _{CE} =30V, V _{EB(OFF)} =3V)	-	50	nA
I _{EBO}	Emitter-Base Cutoff Current (V _{EB} =5V, I _C =0mA)	-	50	nA
h _{FE}	DC Current Gain (I _C =10mA, V _{CE} =1.0V)	100	300	-
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C =50mA, I _B =5.0mA)		0.3	V
V _{BE(sat)}	Base-Emitter Saturation Voltage (I _C =50mA, I _B =5.0mA)		0.95	V
f _T	Transition Frequency (I _C =10mA, V _{CE} =20V, f=100MHz)	300	-	MHz
t _d	Delay Time (V _{CC} =3.0V, V _{BE(off)} =-0.5V, I _C =10mA, I _B =1.0mA)	-	35	ns
t _r	Rise Time (V _{CC} =3.0V, V _{BE(off)} =-0.5V, I _C =10mA, I _B =1.0mA)	-	35	ns
t _s	Storage Time (V _{CC} =3.0V, I _C =10mA, I _B =1.0mA)	-	200	ns
t _f	Fall Time (V _{CC} =3.0V, I _C =10mA, I _B =1.0mA)	-	50	ns

Typical Performance Characteristics

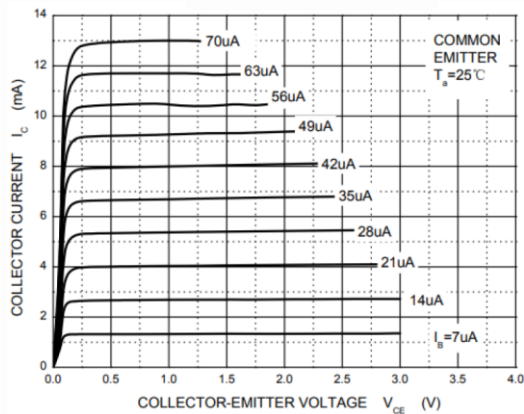


Figure 1. Static Characteristic

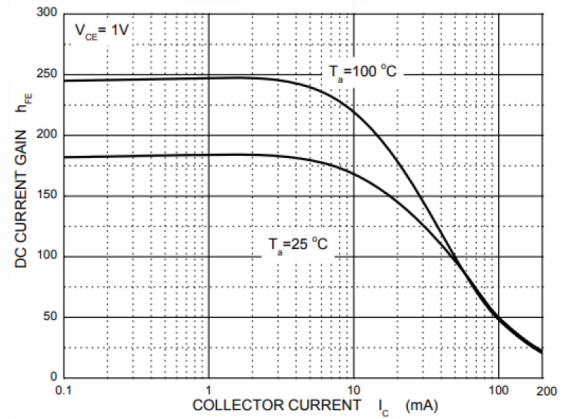


Figure 2. Typical h_{FE} vs. Collector Current

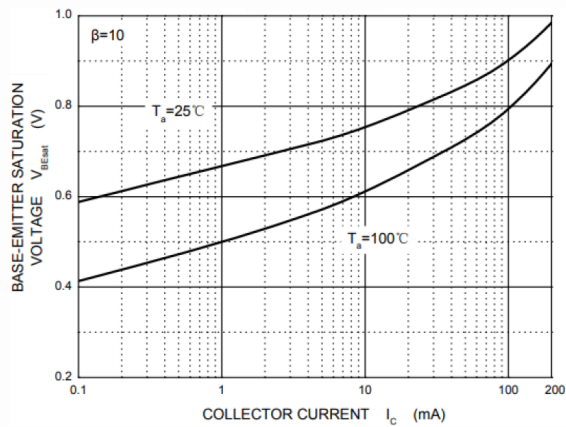


Figure 3. Typical $V_{CE(sat)}$ vs. Collector Current

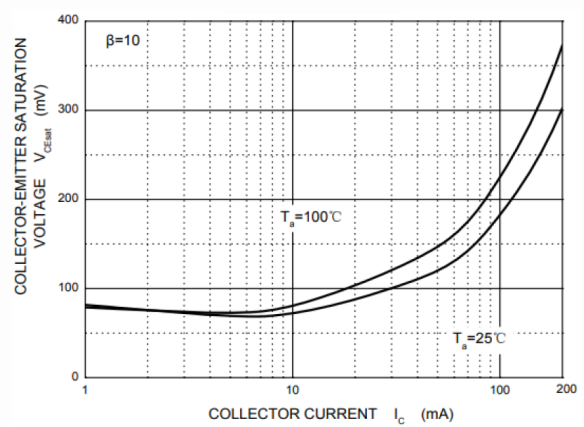


Figure 4. Typical $V_{BE(sat)}$ vs. Collector Current

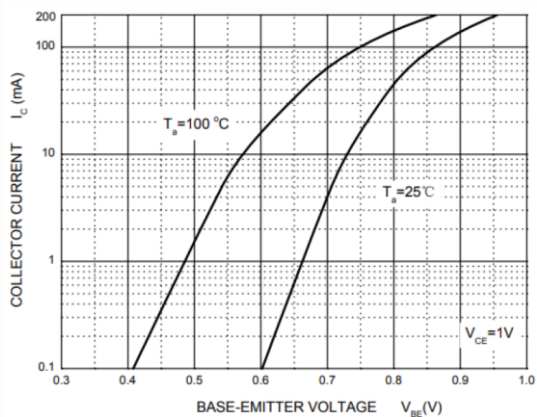


Figure 5. Typical Collector Current vs. Collector-Emitter Voltage

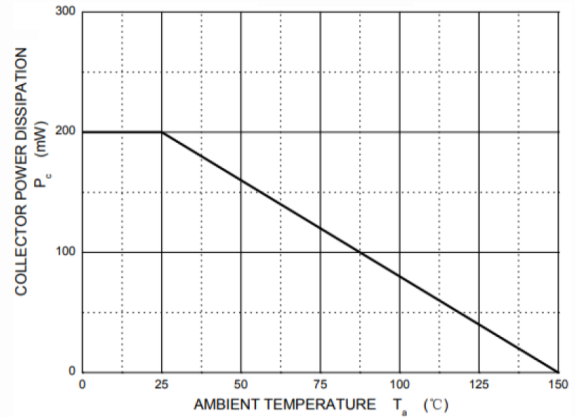
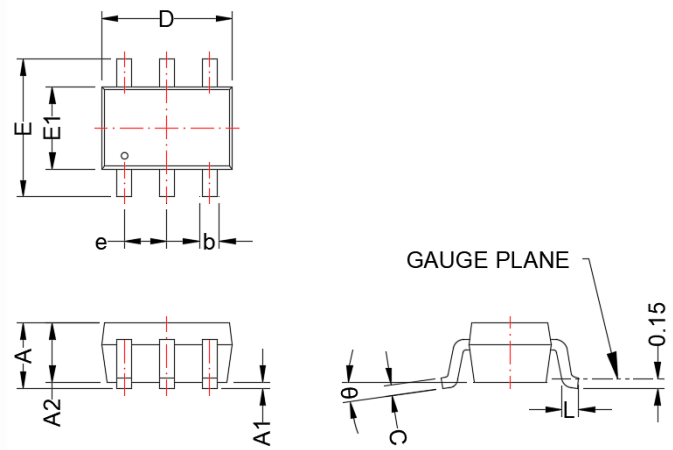


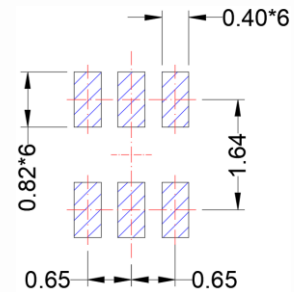
Figure 6. Transition Frequency vs. Collector Current

SOT-363

Package Dimension



Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A2	0.70	1.00	0.028	0.039
b	0.15	0.30	0.006	0.012
c	0.08	0.25	0.003	0.010
D	1.80	2.20	0.071	0.087
E	1.80	2.40	0.071	0.094
E1	1.15	1.35	0.045	0.053
e	0.65 BSC		0.026 BSC	
L	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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