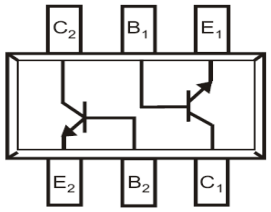
Dual NPN Small Signal Surface Mount Transistor MMDT3904

FEATURES

- Epitaxial planar die construction.
- Ideal for low power amplification and switching.
- Ultra-small surface mount package
- Also available in lead free version.

Lead-free



SOT-363

APPLICATIONS

- General switching and amplification

ORDERING INFORMATION

Type No.	Marking	Package Code
MMDT3904	K6N	SOT-363

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	collector-base voltage	60	V
V_{CEO}	collector-emitter voltage	40	V
V_{EBO}	emitter-base voltage	6	V
I_C	collector current -continuous	0.2	A
P_{tot}	total power dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625	℃/W
T_{stg}	storage temperature	150	°C
T_j	junction temperature	-55-150	°C

Dual NPN Small Signal Surface Mount Transistor MMDT3904

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=10μA,I_E=0	60		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA,I_B=0	40		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA,I_C=0	5		V
I_{CEX}	collector cut-off current	V_{CE}=30V,$V_{EB(OFF)}$=3.0V	-	50	nA
I_{BL}	Base cut-off current	V_{CE}=30V,$V_{EB(OFF)}$=3.0V	-	50	nA
h_{FE}	DC current gain	V_{CE} =1V,I_C= 0.1mA V_{CE} =1V,I_C =1mA V_{CE} =1V,I_C =10mA V_{CE} =1V,I_C =50mA V_{CE} =1V,I_C =100mA	40 70 100 60 30	- - 300 - -	
$V_{CE(sat)}$	collector-emitter saturation voltage	I_C =10mA,I_B =1mA	-	200	mV
		I_C =50mA,I_B =5mA	-	300	mV
$V_{BE(sat)}$	base-emitter saturation voltage	I_C =10mA,I_B =1mA	650	850	mV
		I_C =50mA, I_B =5mA	-	950	mV
C_{obo}	Output capacitance	I_E =0, V_{CB} =5V, f =1MHz	-	4	pF
C_{ibo}	Input capacitance	I_C=0, V_{EB} =0.5V, f =1MHz	-	8	pF
f_T	transition frequency	I_C=10mA,V_{CE}=20V,f=100MHz	300	-	MHz
NF	noise figure	I_C=0.1mA,V_{CE} =5V,R_S=1kΩ, f = 1kHz	-	5	dB
t_d	delay time	V_{CC}=3V,$V_{BE(off)}$=-0.5V	-	35	ns
t_r	rise time	I_C=10mA I_{B1}=1mA	-	35	ns
t_s	storage time	V_{CC}=3V,I_C=10mA	-	200	ns
t_f	fall time	I_{B1}=I_{B2}=1mA	-	50	ns

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

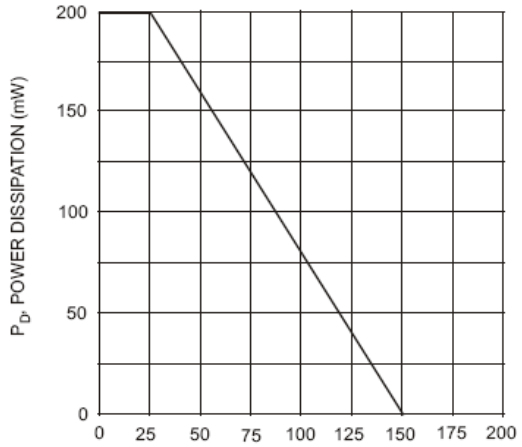


Fig. 1, Max Power Dissipation vs Ambient Temperature

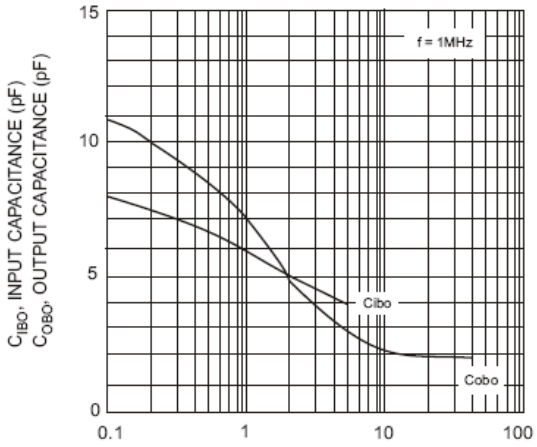


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

Dual NPN Small Signal Surface Mount Transistor MMDT3904

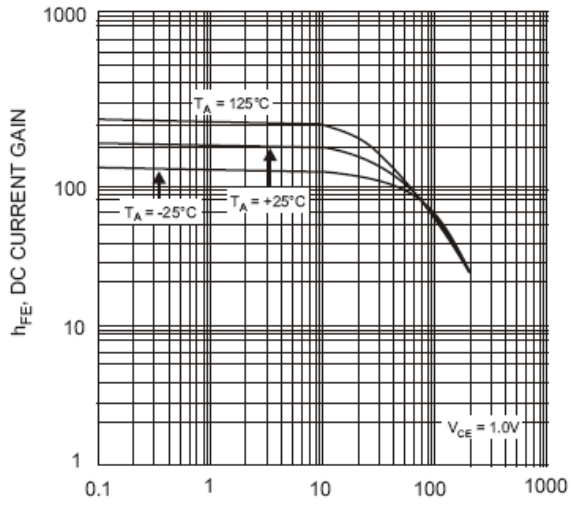


Fig. 3, Typical DC Current Gain vs Collector Current

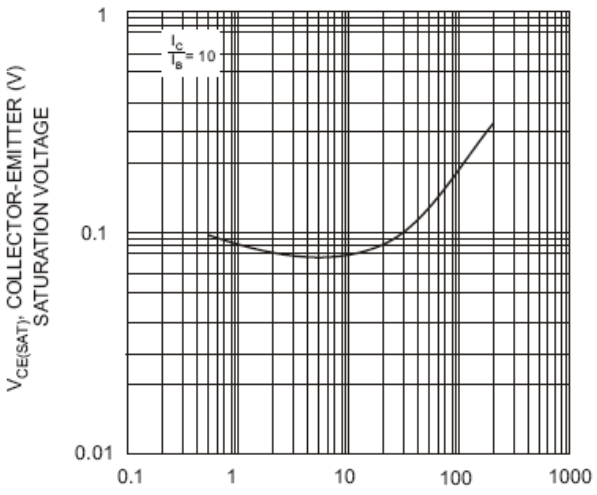


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

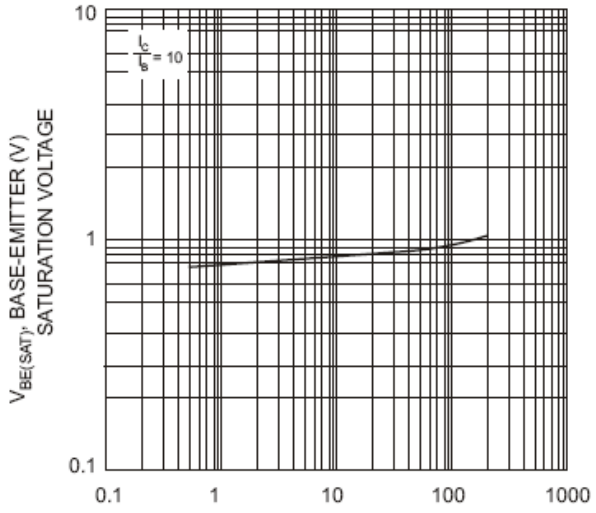
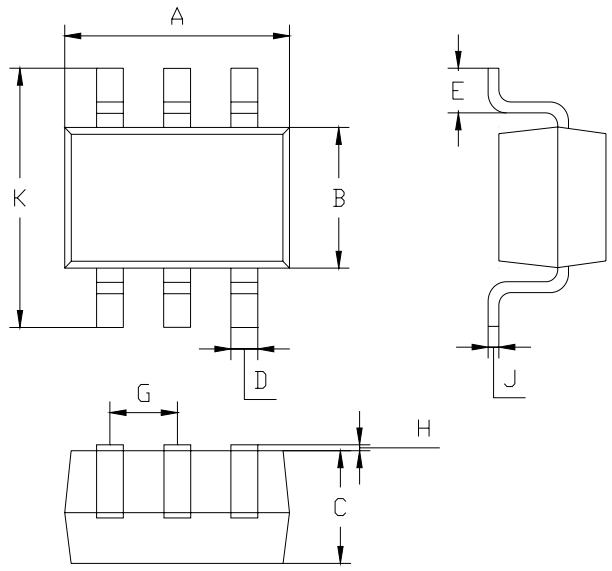


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

Dual NPN Small Signal Surface Mount Transistor MMDT3904

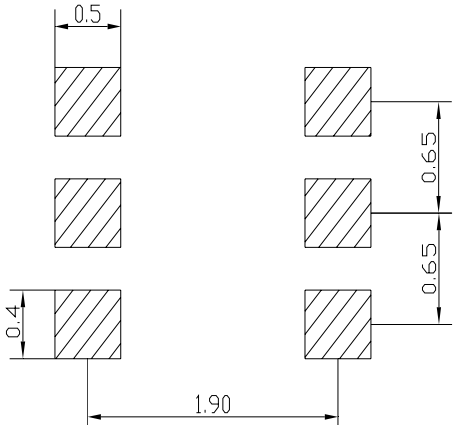
PACKAGE OUTLINE

Plastic surface mounted package SOT-363



SOT-363		
Dim	Min	Max
A	1.8	2.2
B	1.15	1.35
C	1.0Typical	
D	0.10	0.30
E	0.25	0.40
G	0.65Typical	
H	0.02	0.10
J	0.1Typical	
K	2.1	2.3
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMDT3904	SOT-363	3000/Tape&Reel