



Micro Commercial Components



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MMDT3904

200mW

Plastic-Encapsulate
Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Collector Current: $I_C=0.2A$
- Epitaxial planar die construction
- Ideal for low power amplification and switching
- Marking: K6N
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

Symbol	Rating	Rating	Unit
P_C	Power dissipation ⁽¹⁾	200	mW
R_{THJA}	Thermal Resistance	625	$^{\circ}C/W$
T_J	Junction Temperature	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}C$

Electrical Characteristics @ 25 $^{\circ}C$ Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=1.0mA$, $I_B=0$)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10\mu A$, $I_E=0$)	60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=10\mu A$, $I_C=0$)	5.0		Vdc
I_{EBO}	Emitter Cutoff Current ($V_{EB}=5V$, $I_C=0$)		50	nAdc
I_{CEO}	Collector Cutoff Current ($V_{CE}=30V$, $I_B=0$)		50	nAdc
I_{CBO}	Collector Cutoff Current ($V_{CB}=30V$, $I_E=0$)		50	nAdc

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=10mA$, $V_{CE}=1.0V$) ($I_C=50mA$, $V_{CE}=1.0V$)	100 60	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=50mA$, $I_B=5.0mA$)		0.3	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=50mA$, $I_B=5.0mA$)		0.95	Vdc

SMALL-SIGNAL CHARACTERISTICS

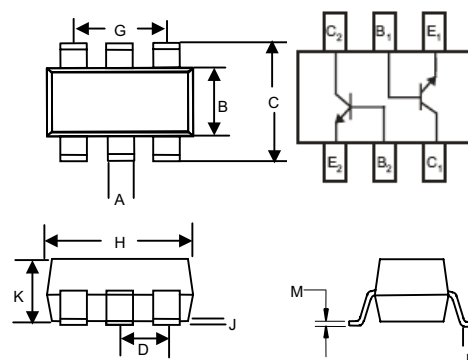
f_T	Current Gain-Bandwidth Product ($I_C=10mA$, $V_{CE}=20V$, $f=100MHz$)	300		MHz
C_{obo}	Output Capacitance ($V_{CB}=5.0V$, $I_E=0$, $f=1.0MHz$)		4.0	pF

SWITCHING CHARACTERISTICS

t_d	Delay Time	$(V_{CC}=3.0V$, $V_{BE}=0.5V$)	35	ns
t_r	Rise Time	$I_C=10mA$, $I_{B1}=1.0mA$	35	ns
t_s	Storage Time	$(V_{CC}=3.0V$, $I_C=10mA$)	200	ns
t_f	Fall Time	$I_{B1}=I_{B2}=1.0mA$	50	ns

Note: 1. Valid provided that terminals are kept at ambient temperature.

SOT-363



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.085	.096	2.15	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.035	.043	0.90	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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