WNT2F04

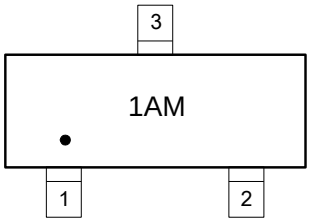
NPN, General Purpose Transistors **Http//:www.willsemi.com**

Descriptions

The WNT2F04 is designed for general purpose amplifier applications. Standard products are Pb-free and Halogen-free

SOT-23

(Top View)



Marking :1AM

1: BASE
2: EMITTER
3: COLLECTOR

Features

- Complementary to WPT2F06
- Collector Current: I_C=0.2A

Order information

Device	Package	Shipping
WNT2F04-3/TR	SOT-23	3000/Reel&Tape

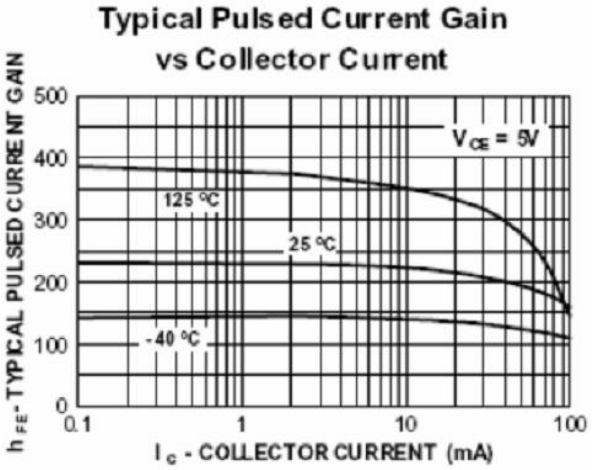
Absolute maximum ratings

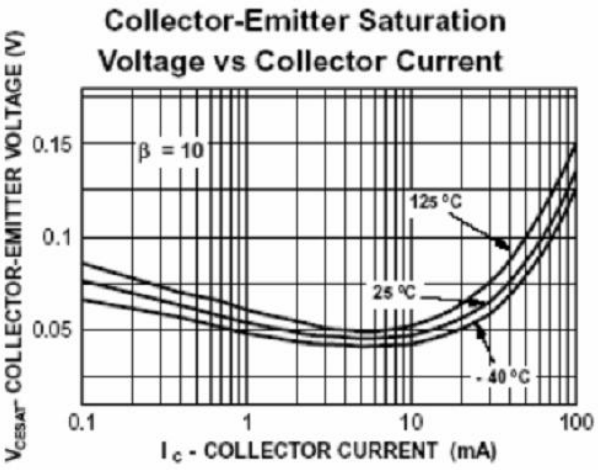
Parameter	Symbol	Value	Unit
Collector-emitter Voltage	V_{CEO}	40	V
Collector-base Voltage	V_{CBO}	60	V
Emitter-base Voltage	V_{EBO}	6	V
Continues Collector Current	I_C	200	mA
Collector Power Dissipation	P_C	250	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	625	°C /W
Junction Temperature	T_J	150	°C
Operating Temperature	T_{OPR}	0~+70	°C
Storage Temperature Range	T_{stg}	-55~+150	°C

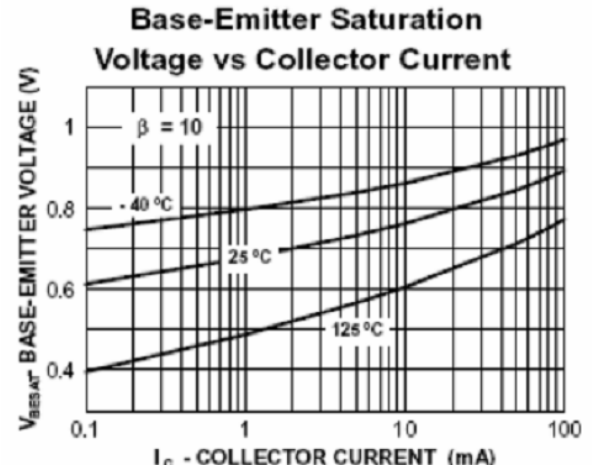
Electronics Characteristics (Ta=25°C, unless otherwise noted)

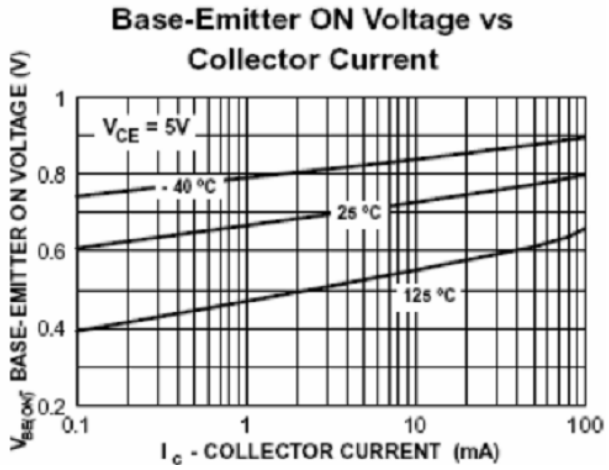
Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Collector-emitter breakdown voltage	BV_{CEO}	I_C=1mA, I_B=0mA	40		V
Collector-base breakdown voltage	BV_{CBO}	I_C=10uA, I_E=0mA	60		V
Emitter-base breakdown voltage	BV_{EBO}	I_E=10uA, I_C=0mA	6		V
Collector cutoff current	I_{CEX}	V_{CE}=30V, $V_{EB(OFF)}$=3V		50	nA
Collector cutoff current	I_{CBO}	V_{CB}=60V, I_E=0A		100	nA
Emitter cutoff current	I_{EBO}	V_{EB}=5V, I_C=0A		100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=50mA, I_B=5mA		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=50mA, I_B=5mA		0.95	V
DC current gain	h_{FE}	V_{CE}=1V, I_C=1mA	80		
		V_{CE}=1V, I_C=10mA	100	300	
		V_{CE}=1V, I_C=50mA	60		
Collector capacitance	C_C	I_E=I_e=0;V_{CE}=5V; f=1MHz		4	pF
Emitter capacitance	C_E	I_C=I_c=0;V_{BE}=0.5V; f=1MHz		8	pF
Noise figure	F	I_C=100mA; V_{CE}=5V; R_S=1kΩ; f=10Hz to15.7kHz		5	dB
Transition frequency	f_T	VCE=20V, IC=10mA, f=100MHz	300		MHz
Delay time	t_d	VCC=3V, VBE(off)=-0.5V IC=10mA, IB1=1mA		35	ns
Rise time	t_r			35	ns
Storage time	t_s	VCC=3V, IC=10mA, IB1= IB2=1mA		200	ns
Fall time	t_f			50	ns

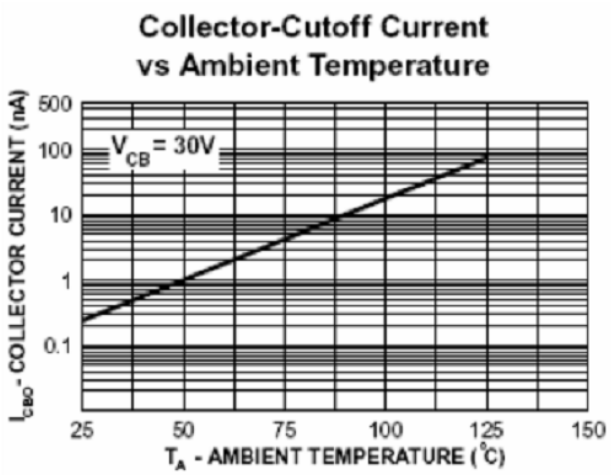
Typical characteristics (Ta=25°C, unless otherwise noted)

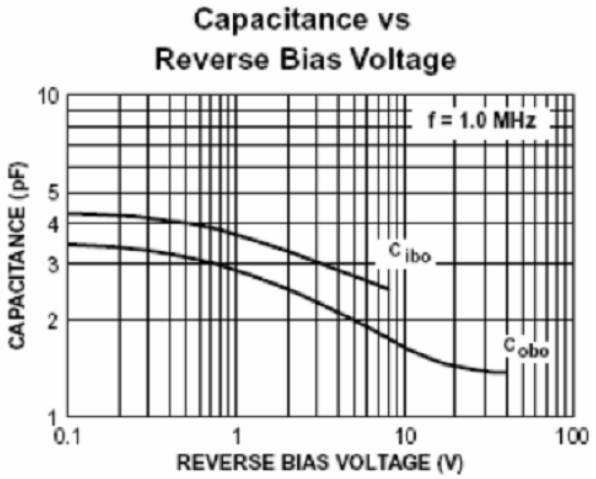






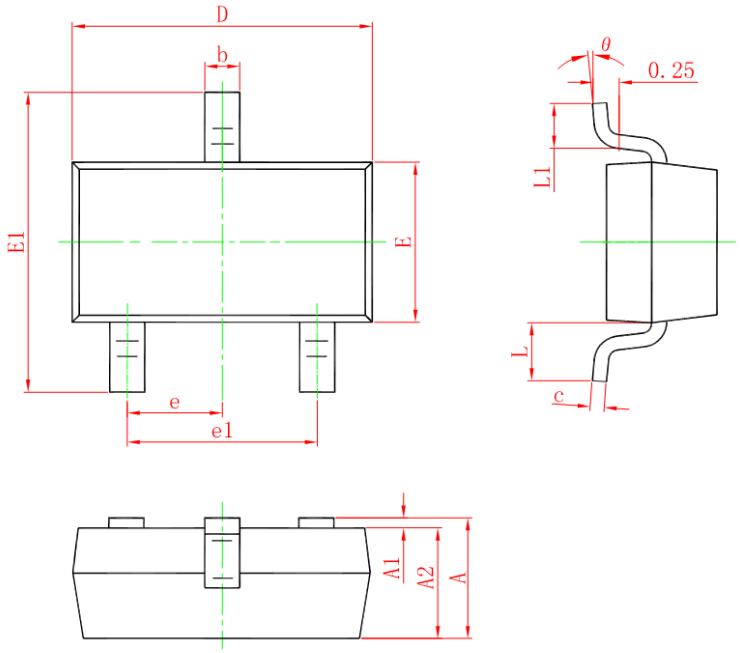






Package outline dimensions

SOT-23



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.500	0.100
A2	0.900	0.975	1.050
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
E1	2.250	2.400	2.550
e	0.950TYP		
e1	1.800	1.900	2.000
L	0.500REF		
L1	0.300	0.400	0.500
θ	0°	4°	8°

Recommend PCB Layout (Unit: mm)