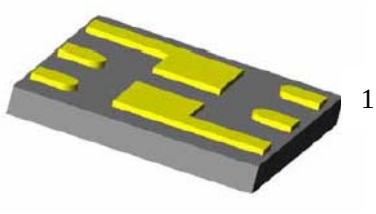
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

WBFBP-06C Power management Dual-transistors

FUMF21N TRANSISTOR

WBFBP-06C
(2×2×0.5)
unit: mm

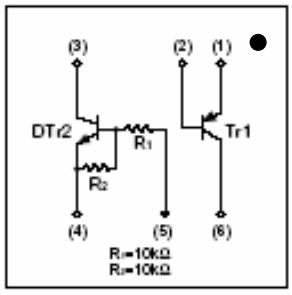


DESCRIPTION
Silicon epitaxial planar transistor

FEATURES
- 2SA2018 and DTC114E are housed independently in a package.
- Power switching circuit in a single package.
- Mounting cost and area can be cut in half.

APPLICATION
Power management circuit, mobile telephone quiver circuit
For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM, Note book PC, etc.)

● Equivalent circuits



MARKING:F21

TR1 MAXIMUM RATINGS T_A=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector- Base Voltage	-15	V
V_{CEO}	Collector-Emitter Voltage	-12	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current -Continuous	-0.5	A
P_C	Collector Dissipation	0.15	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

DTR2 Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	50	V
Input voltage	V_{IN}	-10~40	V
Output current	I_O	50	mA
	$I_{C(MAX)}$	100	
Power dissipation	Pd	150	mW
Junction temperature	Tj	150	℃
Storage temperature	Tstg	-55~150	℃

TR1 ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-15			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-6			V
Collector cut-off current	I_{CBO}	V_{CB}= -15 V, I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=- 6V, I_C=0			-0.1	μA
DC current gain	h_{FE}	V_{CE}=-2V, I_C=-10mA	270		680	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-200mA,I_B=-10mA			-0.25	V
Transition frequency	f_T	V_{CE}=-2V,I_C=-10mA, f=100MHz		260		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz		6.5		pF

DTR2 Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$			0.5	V	V_{CC}=5V ,I_O=100μA
	$V_{I(on)}$	3				V_O=0.3V ,I_O=10 mA
Output voltage	$V_{O(on)}$			0.3	V	I_O/I_I=10mA/0.5mA
Input current	I_I			0.88	mA	V_I=5V
Output current	$I_{O(off)}$			0.5	μA	V_{CC}=50V, V_I=0
DC current gain	G_I	30				V_O=5V ,I_O=5mA
Input resistance	R_1	7	10	13	KΩ	
Resistance ratio	R_2/R_1	0.8	1	1.2		
Transition frequency	f_T		250		MHz	V_{CE}=10V ,I_E=-5mA,f=100MHz

Typical Characteristics

TR1

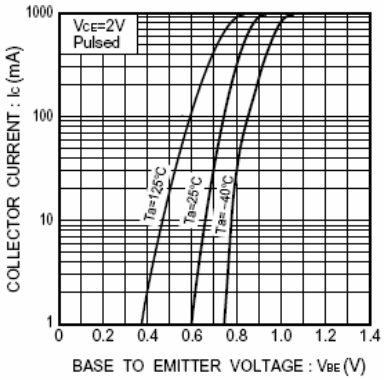


Fig.1 Grounded emitter propagation characteristics

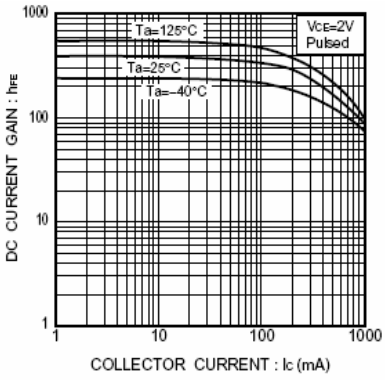


Fig.2 DC current gain vs. collector current

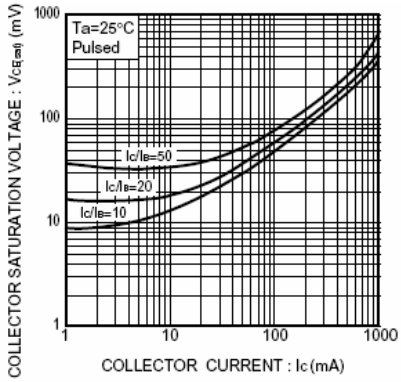


Fig.3 Collector-emitter saturation voltage vs. collector current (I)

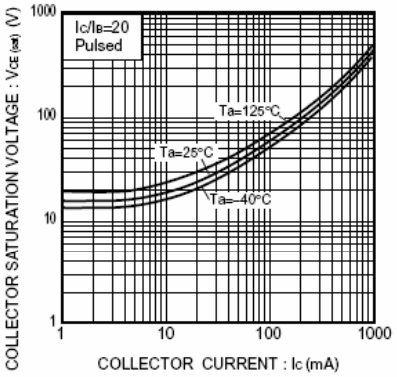


Fig.4 Collector-emitter saturation voltage vs. collector current (II)

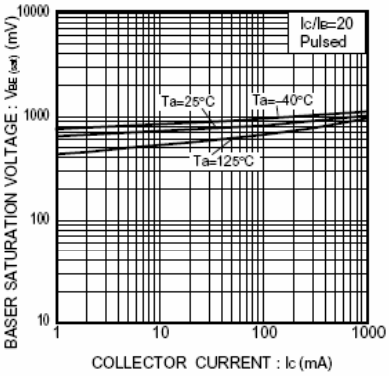


Fig.5 Base-emitter saturation voltage vs. collector current

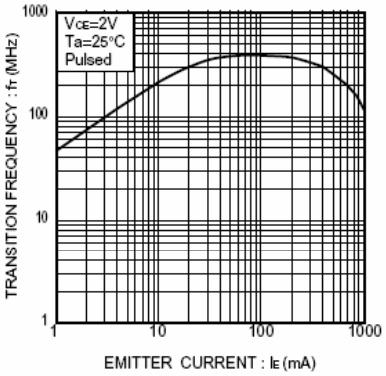


Fig.6 Gain bandwidth product vs. emitter current

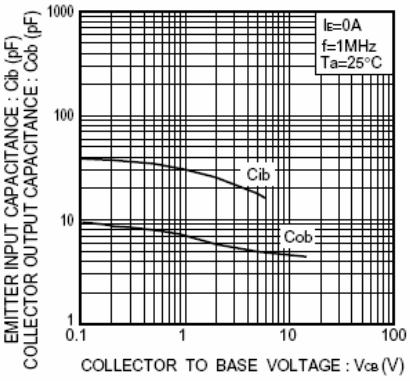


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

DTR2

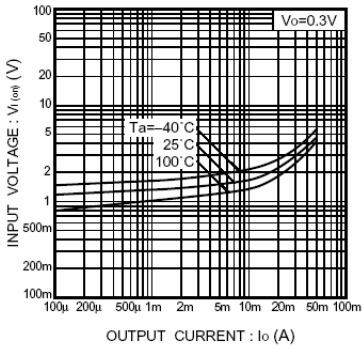


Fig.1 Input voltage vs. output current (ON characteristics)

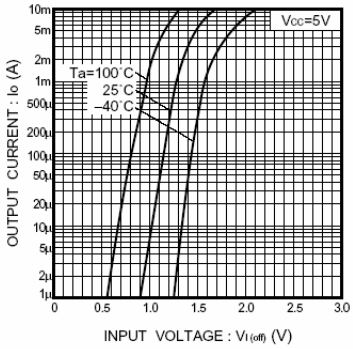


Fig.2 Output current vs. input voltage (OFF characteristics)

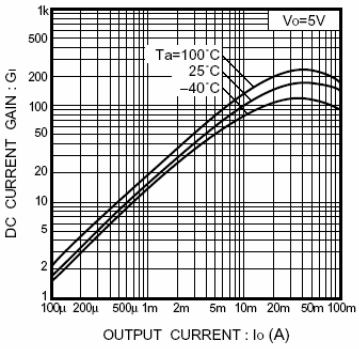


Fig.3 DC current gain vs. output current

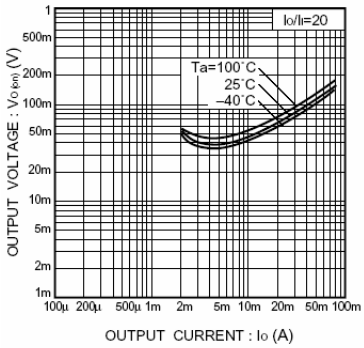
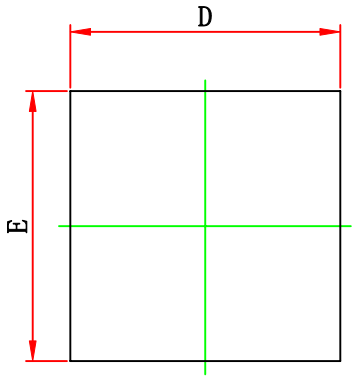
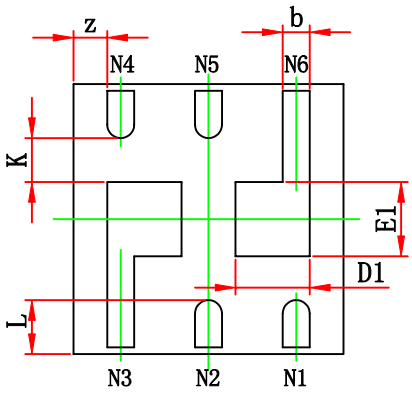


Fig.4 Output voltage vs. output current

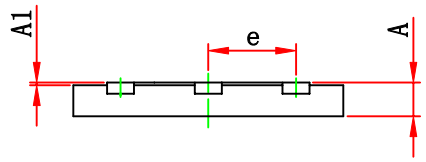
WBFBP-06C(2×2×0.5) PACKAGE OUTLINE DIMENSIONS



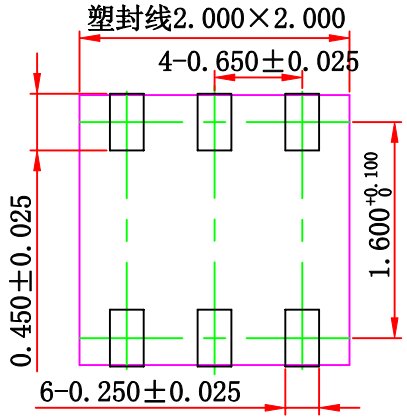
TOP VIEW



BOTTOM VIEW



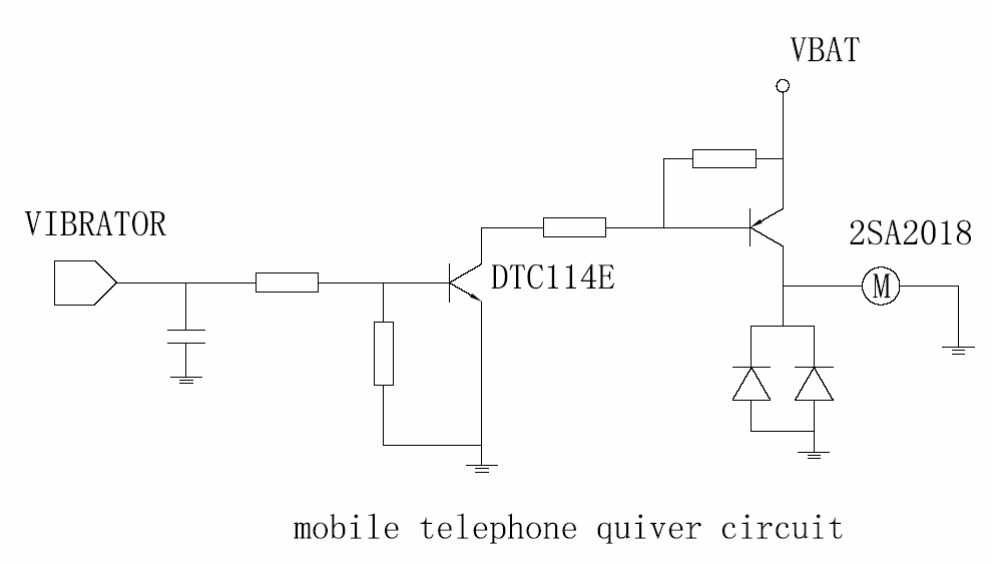
SIDE VIEW



LAND PATTERN RECOMMENDATION
推 荐 焊 盘 图

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.000	0.100	0.000	0.004
b	0.150	0.250	0.006	0.010
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.550 REF.		0.022 REF.	
E1	0.550 REF.		0.022 REF.	
e	0.650 TYP.		0.026 TYP.	
L	0.400 REF.		0.016 REF.	
k	0.300 REF.		0.012 REF.	
z	0.500 REF.		0.020 REF.	

APPLICATION CIRCUITS



mobile telephone quiver circuit