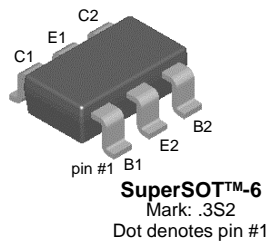


FMBM5551

NPN General Purpose Amplifier SuperSOT-6 Surface Mount Package

Features

- This device has matched dies
- Sourced from process 16.
- See MMBT5551 for characteristics



Absolute Maximum Ratings *

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	160	V
V_{CBO}	Collector-Base Voltage	180	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current (DC)	600	mA
P_C	Collector Dissipation ($T_C = 25^\circ\text{C}$)	0.7	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 ~ 150	$^\circ\text{C}$
$T_{\theta JA}$	Thermal Resistance, Junction to Ambient	180	$^\circ\text{C}/\text{W}$

* Pd total, for both transistors. For each transistor, Pd = 350mW

Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

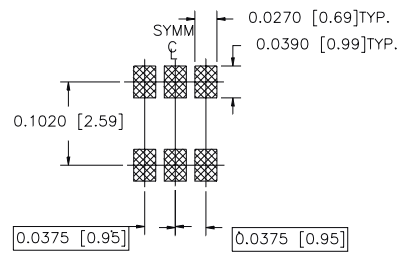
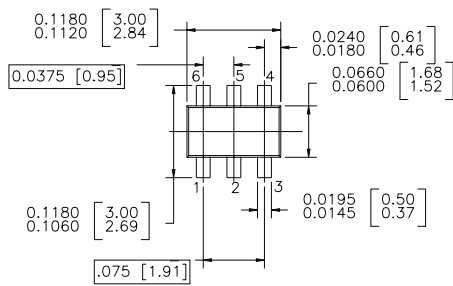
Symbol	Parameter	Conditions	Min.	Max	Units
Off Characteristics					
BV_{CEO}	Collector-Emitter Voltage	$I_C = 1\text{mA}, I_B = 0$	160		V
BV_{CBO}	Collector-Base Voltage	$I_C = 100\mu\text{A}, I_E = 0$	180		V
BV_{EBO}	Emitter-Base Voltage	$I_C = 10\mu\text{A}, I_C = 0$	6		V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 120\text{V}$ $V_{CB} = 120\text{V}, T_a = 100^\circ\text{C}$		50 50	nA μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 10\text{V}$		50	nA
On Characteristics					
h_{FE1}	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	80		
DIVID1	Variation Ratio of h_{FE1} Between Die 1 and Die 2	$h_{FE1}(\text{Die1})/h_{FE1}(\text{Die2})$	0.9	1.1	
h_{FE2}	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	80	250	
DIVID2	Variation Ratio of h_{FE2} Between Die 1 and Die 2	$h_{FE2}(\text{Die1})/h_{FE2}(\text{Die2})$	0.95	1.05	

Electrical Characteristics (Continued) $T_C = 25^\circ\text{C}$ unless otherwise noted

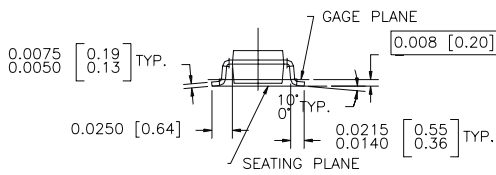
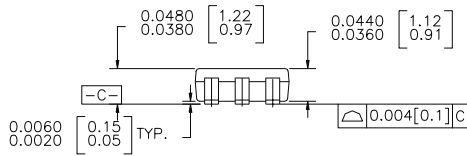
Symbol	Parameter	Conditions	Min.	Max	Units
h_{FE3}	DC Current Gain	$V_{CE} = 5V, I_C = 50mA$	30		
DIVID3	Variation Ratio of h_{FE3} Between Die 1 and Die 2	$h_{FE3}(\text{Die1})/h_{FE3}(\text{Die2})$	0.9	1.1	
$V_{CE(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = 10mA, I_B = 1mA$ $I_C = 50mA, I_B = 5mA$		0.15 0.2	V V
$V_{BE(\text{sat})}$	Base-Emitter Saturation Voltage	$I_C = 10mA, I_B = 1mA$ $I_C = 50mA, I_B = 5mA$		1 1	V V
$V_{BE(\text{on})}$	Base-Emitter On Voltage	$V_{CE} = 5V, I_C = 10mA$		1	V
DEL	Difference of $V_{BE(\text{on})}$ Between Die1 and Die 2	$V_{BE(\text{on})}(\text{Die1}) - V_{BE(\text{on})}(\text{Die2})$	-8	8	mV
Small Signal Characteristics					
C_{ob}	Output Capacitance	$V_{CB} = 10V, f = 1MHz$		6	pF
C_{ib}	Input Capacitance	$V_{CB} = 0.5V, f = 1MHz$		20	pF
f_T	Current Gain Bandwidth Product	$V_{CE} = 10V, I_C = 10mA, f = 100MHz$	100	300	MHz
NF	Noise Figure	$V_{CE} = 5V, I_C = 200\mu A, f = 1MHz,$ $R_S = 20K\Omega, B = 200Hz$		8	dB
h_{fe}	Small Signal Current Gain	$V_{CE} = 10V, I_C = 1.0mA, f = 1.0KHz$	50	250	

Mechanical Dimensions

SuperSOT™-6



CONTROLLING DIMENSION IS INCH
VALUES IN [] ARE MILLIMETERS



- NOTES : UNLESS OTHERWISE SPECIFIED
- 1.0 STANDARD LEAD FINISH : 150 MICRONS (3.81 MICROMETERS) MINIMUM TIN / LEAD (SOLDER) ON COPPER.
 - 2.0 NO JEDEC REGISTRATION AS OF JULY 1996

SUPER SOT 6 LEADS

Dimensions in Millimeters

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CoolFET™	FRFET™	MICROCOUPLER™	PowerSaver™	SuperSOT™-3
CROSSVOLT™	GlobalOptoisolator™	MicroFET™	PowerTrench®	SuperSOT™-6
DOMET™	GTO™	MicroPak™	QFET®	SuperSOT™-8
EcoSPARK™	HiSeC™	MICROWIRE™	QS™	SyncFET™
E ² CMOS™	ꞑC™	MSX™	QT Optoelectronics™	TinyLogic®
EnSigna™	i-Lo™	MSXPro™	Quiet Series™	TINYOPTO™
FACT™	ImpliedDisconnect™	OCX™	RapidConfigure™	TruTranslation™
FACT Quiet Series™		OCXPro™	RapidConnect™	UHC™
Across the board. Around the world.™		OPTOLOGIC®	µSerDes™	UltraFET®
The Power Franchise®		OPTOPLANAR™	SILENT SWITCHER®	UniFET™
Programmable Active Droop™		PACMAN™	SMART START™	VCX™

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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