FMBS5551 Datasheet

DiGi Electronics Part Number	FMBS5551-DG
Manufacturer	onsemi
Manufacturer Product Number	FMBS5551
Description	TRANS NPN 160V 0.6A SUPERSOT-6
Detailed Description	Bipolar (BJT) Transistor NPN 160 V 600 mA 300MHz 700 mW Surface Mount SuperSOT™-6

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RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
FMBS5551	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	600 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
160 V	200mV @ 5mA, 50mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
50nA (ICBO)	80 @ 10mA, 5V
Power - Max:	Frequency - Transition:
700 mW	300MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SOT-23-6 Thin, TSOT-23-6	SuperSOT™-6
Base Product Number:	
FMBS5	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.21.0075

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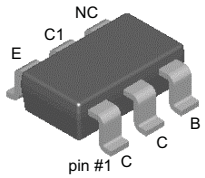
FMBS5551

NPN General Purpose Amplifier

- This device is designed for general purpose high voltage amplifiers and gas discharge display drivers.



SuperSOT™-6 single
Mark: .3S1

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	160	V
V_{CBO}	Collector-Base Voltage	180	V
V_{EBO}	Emitter-Base Voltage	6.0	V
I_C	Collector Current - Continuous	600	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 55 ~ 150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:
1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Sustaining Voltage *	I_C = 1.0mA, I_B = 0	160		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100μA, I_E = 0	180		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	6.0		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 120V, I_E = 0 V_{CB} = 120V, I_E = 0, T_a = 100°C		50 50	nA μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 4.0V, I_C = 0		50	nA
On Characteristics					
h_{FE}	DC Current Gain	I_C = 1.0mA, V_{CE} = 5.0V I_C = 10mA, V_{CE} = 5.0V I_C = 50mA, V_{CE} = 5.0V	80 80 30	 250 	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA		0.15 0.2	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA		1.0 1.0	V
Small Signal Characteristics					
f_T	Current Gain Bandwidth Product	I_C = 10mA, V_{CE} = 10, f = 100MHz	100	300	MHz
C_{obo}	Output Capacitance	V_{CE} = 10V, I_C = 0, f = 1.0MHz		6.0	pF
C_{ibo}	Input Capacitance	V_{BE} = 0.5V, I_C = 0, f = 1.0MHz		20	pF
h_{fe}	Small Single Current Gain	I_C = 1.0mA, V_{CE} = 10V, f = 1.0KHz	50	250	
N_F	Noise Figure	I_C = 250μA, V_{CE} = 5.0V, R_S = 1.0KΩ, f = 10 Hz to 15.7KHz		8.0	dB

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

Thermal Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation *	700	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient, total	180	°C/W

* Device mounted on a 1 in 2 pad of 2 oz copper.

Typical Characteristics

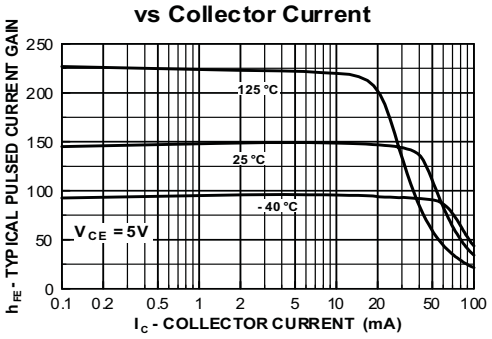


Figure 1. Typical Pulsed Current Gain vs Collector Current

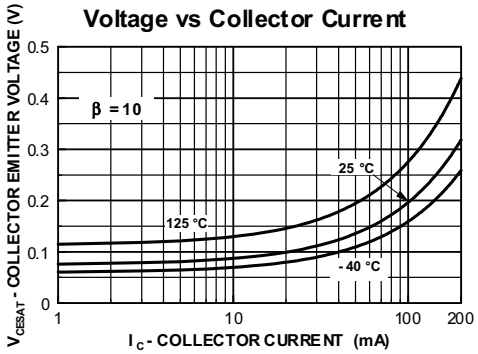


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

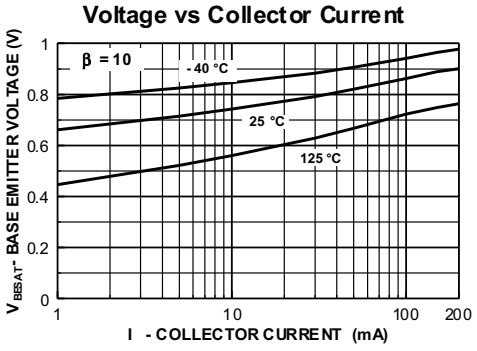


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

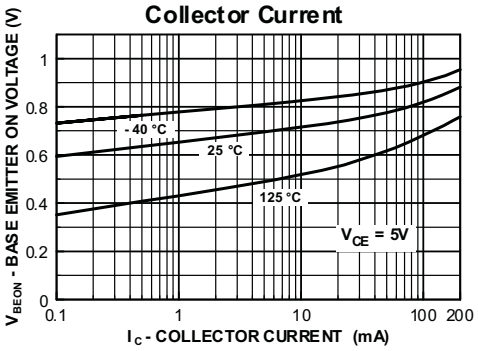


Figure 4. Base-Emitter On Voltage vs Collector Current

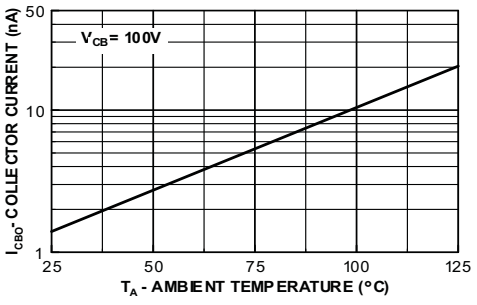


Figure 5. Collector Cutoff Current vs Ambient Temperature

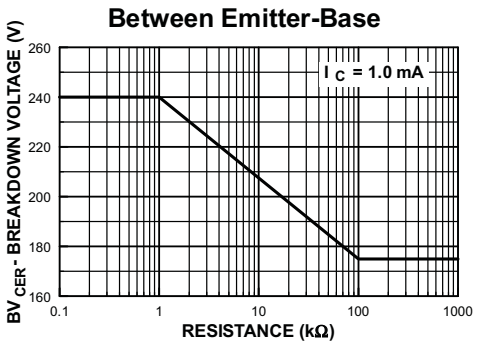


Figure 6. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

Typical Characteristics (Continued)

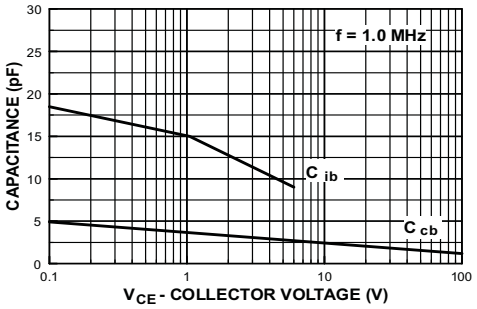


Figure 7. Input and Output Capacitance vs Reverse Voltage

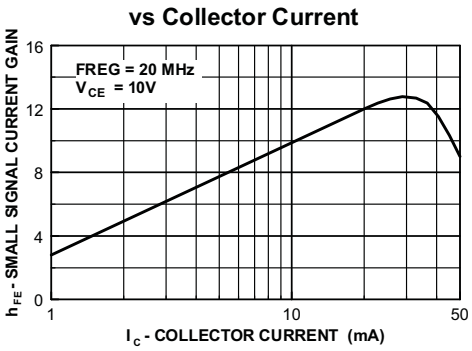
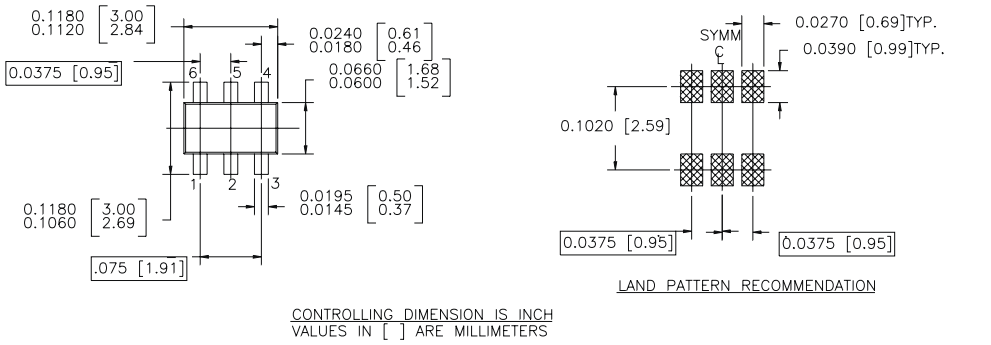


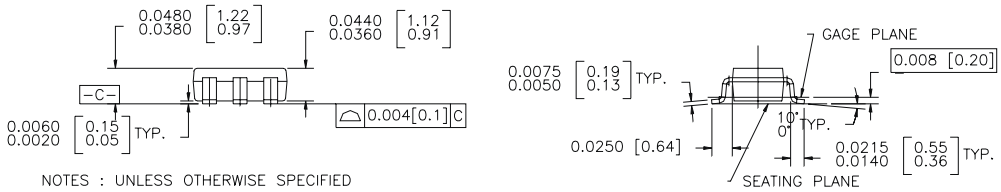
Figure 8. Small Signal current Gain vs Collector Current

Package Dimensions

SuperSOT™-6



CONTROLLING DIMENSION IS INCH
VALUES IN [ ] ARE MILLIMETERS



NOTES : UNLESS OTHERWISE SPECIFIED

1.0 STANDARD LEAD FINISH : 150 MICROINCHES 93.81 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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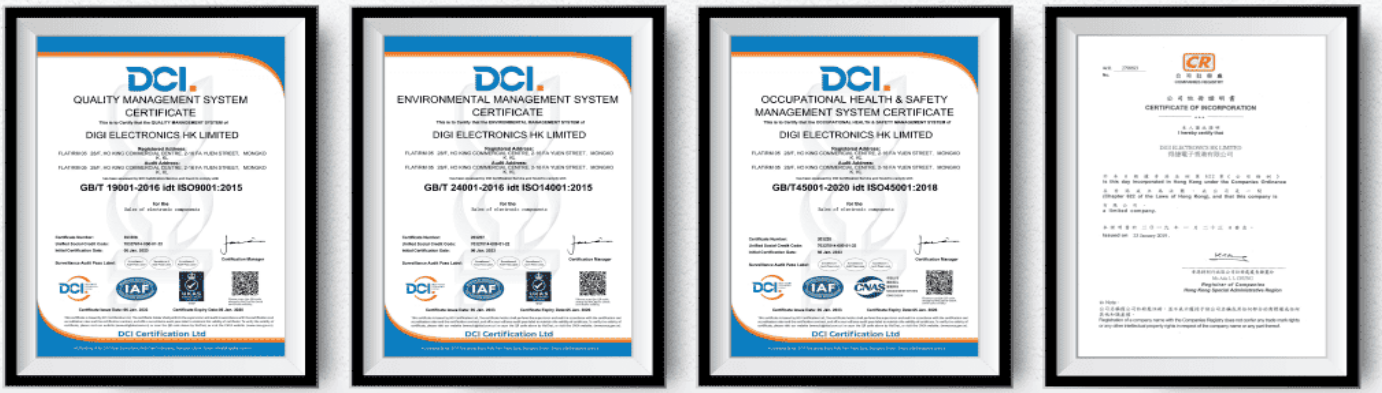

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