

GSMMBT5518DE

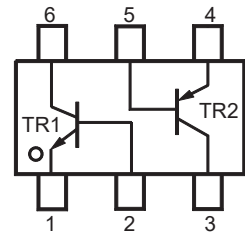
Complementary NPN+PNP Transistors

Features

- Low collector capacitance
- Low $V_{CE(sat)}$
- High current capabilities
- Halogen and antimony free (HAF), RoHS compliant



SOT-563



Schematic Diagram

Applications

- Heavy duty battery powered equipment (automotive, telecom and audio-video) such as motor and lamp drivers
- $V_{CE(sat)}$ critical applications such as latest low supply voltage IC applications
- All battery driven equipment, to save battery power

Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted): TR1&TR2

Parameter	Symbol	Value		Unit
		NPN	PNP	
Collector Base Voltage	V_{CBO}	15	-15	V
Collector Emitter Voltage	V_{CEO}	12	-12	V
Emitter Base Voltage	V_{EBO}	6	-6	V
Collector Current	I_C	0.5	-0.5	A
Peak Collector Current	I_{CM}	1	-1	A
Total Power Dissipation	P_{tot}	200		mW
Thermal Resistance Junction to Ambient ¹	$R_{\theta JA}$	625		$^\circ\text{C/W}$
Junction Temperature	T_J	150		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150		$^\circ\text{C}$

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted): TR1

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=10\text{mA}$	270	680	-
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=50\mu\text{A}$	15	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}$	12	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=50\mu\text{A}$	6	-	V
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=15\text{V}$	-	100	nA
Emitter Base Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$	-	100	nA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=10\text{mA}$	-	250	mV
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=100\text{mA}, F=100\text{MHz}$	250	-	MHz
Collector Capacitance	C_C	$V_{CB}=10\text{V}, I_E=0, F=1\text{MHz}$	-	6	pF

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted): TR2

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-10\text{mA}$	270	680	-
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-50\mu\text{A}$	-15	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}$	-12	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-50\mu\text{A}$	-6	-	V
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=-15\text{V}$	-	-100	nA
Emitter Base Cutoff Current	I_{EBO}	$V_{EB}=-5\text{V}$	-	-100	nA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-200\text{mA}, I_B=-10\text{mA}$	-	-250	mV
Transition Frequency	f_T	$V_{CE}=-5\text{V}, I_C=-100\text{mA}, F=100\text{MHz}$	100	-	MHz
Collector Capacitance	C_C	$V_{CB}=-10\text{V}, I_E=0, F=1\text{MHz}$	-	10	pF

Electrical Characteristic Curves: TR2

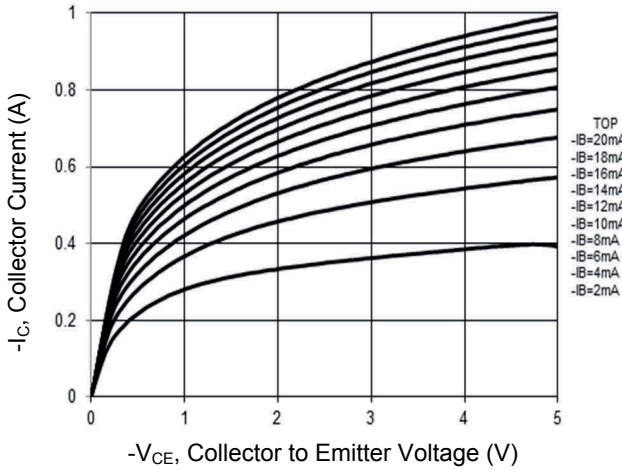


Figure 1. Output Characteristics Curve

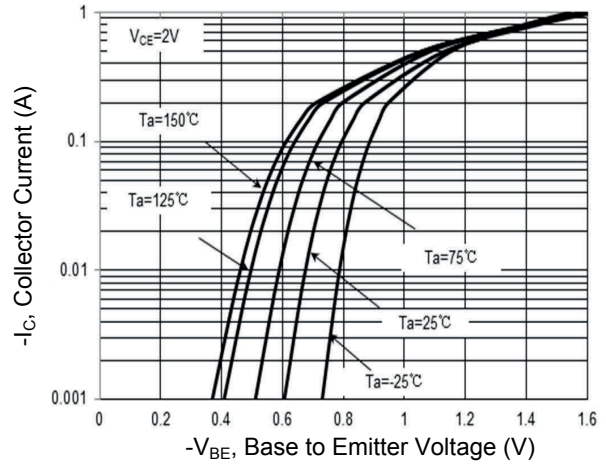


Figure 2. Collector Current vs. Base to Emitter Voltage

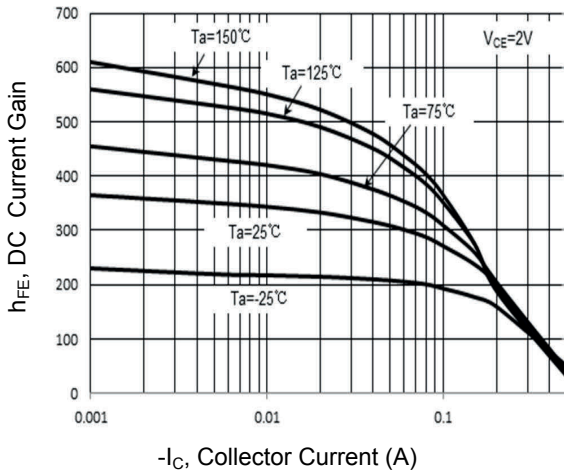


Figure 3. DC Current Gain vs. Collector Current

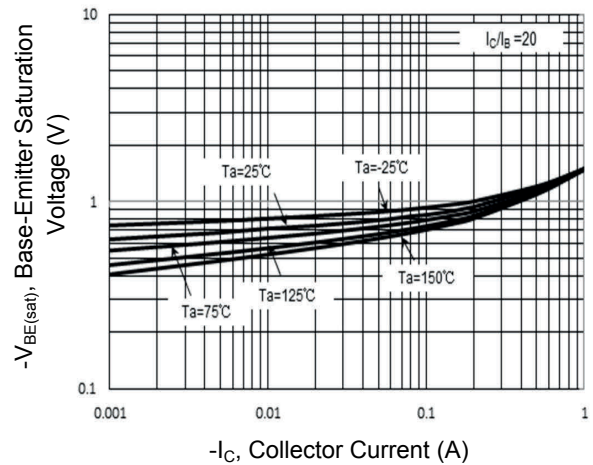


Figure 4. Base-Emitter Saturation Voltage vs. Collector Current

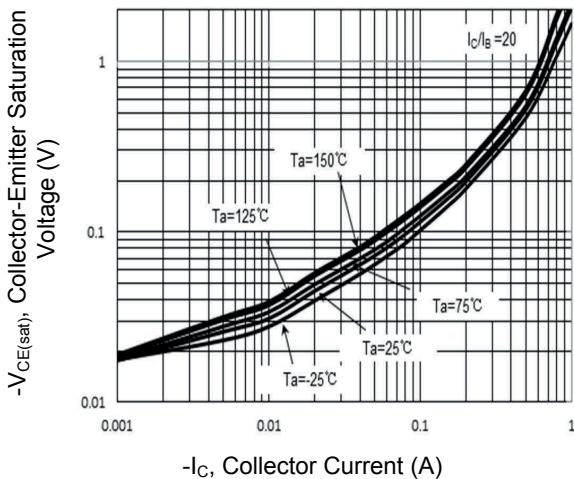


Figure 5. Collector-Emmitter Saturation Voltage vs. Collector Current

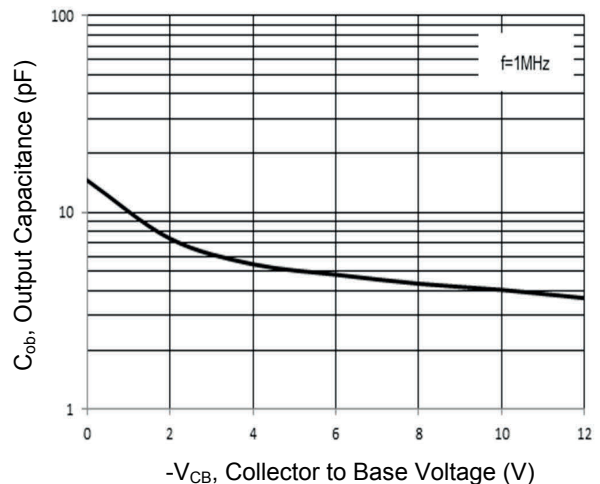
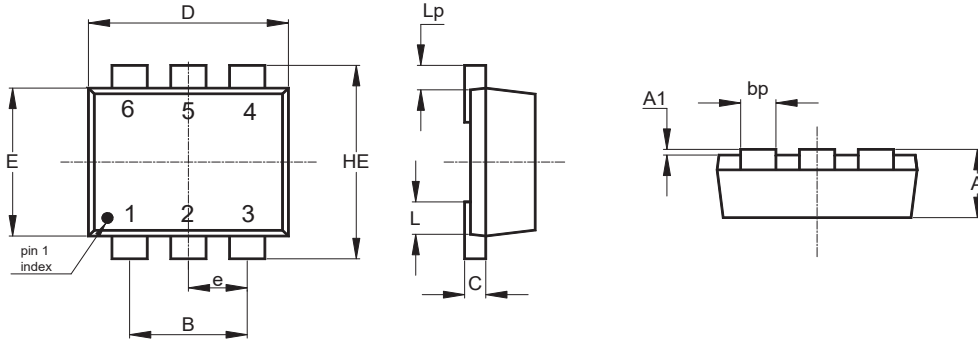


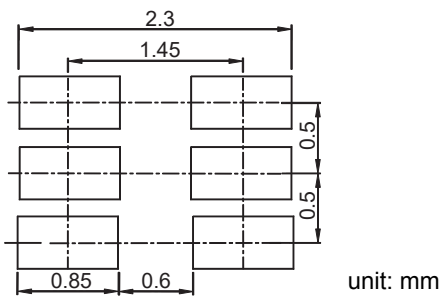
Figure 6. Junction Capacitance

Package Outline Dimensions (SOT-563)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.60	0.020	0.024
A1	0.00	0.05	0.000	0.002
B	1.00 Typ.		0.039 Typ.	
C	0.10	0.18	0.004	0.007
D	1.50	1.70	0.059	0.067
E	1.10	1.25	0.043	0.049
HE	1.55	1.70	0.061	0.067
e	0.50	0.60	0.020	0.024
L	0.02	0.15	0.001	0.006
Lp	0.10	0.30	0.004	0.012
bp	0.15	0.30	0.006	0.012

Recommended Pad Layout



Order Information

Device	Package	Marking	Carrier	Quantity
GSMMBT5518DE	SOT-563	MS	Tape & Reel	4,000pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com