

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- Extremely Low Saturation Voltage
- Complementary to MMBT718

APPLICATION

- Gate Driving MOSFET and IGBT
- DC-DC Converters
- Charging Circuit
- Power Switches

MARKING

618

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

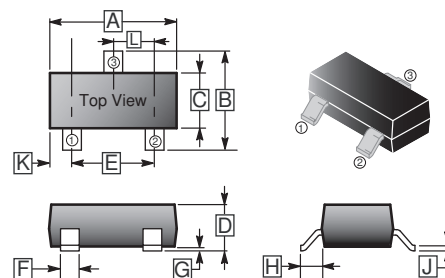
ORDER INFORMATION

Part Number	Type
MMBT618	Lead (Pb)-free
MMBT618-C	Lead (Pb)-free and Halogen-free

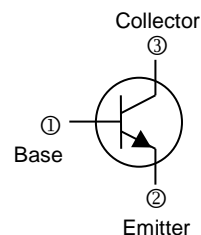
ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V _{CB0}	20	V
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	2.5	A
Base Current	I _B	0.5	A
Collector Power Dissipation	P _C	350	mW
Thermal Resistance from Junction-Ambient	R _{θJA}	357	°C/W
Junction, Storage Temperature Range	T _J , T _{STG}	150, -55~150	°C

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.65	3.10	G	0	0.18
B	2.10	3.00	H	0.55	REF.
C	1.10	1.80	J	0.08	0.26
D	0	1.40	K	0.60	REF.
E	1.70	2.30	L	0.95	TYP.
F	0.28	0.55			



ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20	-	-	V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage ¹	$V_{(BR)CEO}$	20	-	-	V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-	V	$I_E=100\mu\text{A}, I_C=0$
Collector Cut-off Current	I_{CBO}	-	-	100	nA	$V_{CB}=16\text{V}, I_E=0$
Emitter Cut-off Current	I_{EBO}	-	-	100	nA	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain ¹	h_{FE}	200	-	-		$V_{CE}=2\text{V}, I_C=10\text{mA}$
		300	-	-		$V_{CE}=2\text{V}, I_C=200\text{mA}$
		200	-	-		$V_{CE}=2\text{V}, I_C=2\text{A}$
		100	-	-		$V_{CE}=2\text{V}, I_C=4\text{A}$
Collector-Emitter Saturation Voltage ¹	$V_{CE(sat)}$	-	-	15	mV	$I_C=0.1\text{A}, I_B=10\text{mA}$
		-	-	150		$I_C=1\text{A}, I_B=10\text{mA}$
		-	-	200		$I_C=2.5\text{A}, I_B=50\text{mA}$
Base-Emitter Saturation Voltage ¹	$V_{BE(sat)}$	-	-	1	V	$I_C=2.5\text{A}, I_B=50\text{mA}$
Base-Emitter Voltage ¹	$V_{BE(ON)}$	-	-	1	V	$I_C=2.5\text{A}, V_{CE}=2\text{V}$
Transition Frequency	f_T	-	100	-	MHz	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$
Collector Output Capacitance	C_{ob}	-	30	-	pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Turn-on Time	$t_{(on)}$	-	170	-	nS	$V_{CC}=10\text{V}, I_C=1\text{A}, I_{B1}=-I_{B2}=10\text{mA}$
Turn-off Time	$t_{(off)}$	-	400	-		

Note:

1. Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS

