

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

FEATURES

- Low saturation voltage

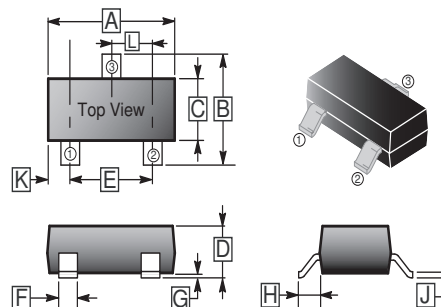
MARKING

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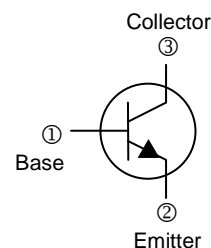
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0.09	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current - Continuous	I_C	2	A
Collector Power Dissipation	P_C	350	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	357	$^\circ\text{C} / \text{W}$
Maximum Power Dissipation ¹	P_{CM}	625	mW
Thermal Resistance From Junction To Ambient ¹	$R_{\theta JA}$	200	$^\circ\text{C} / \text{W}$
Junction, Storage Temperature	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

Note:

1. Maximum power dissipation is calculated assuming that the device is mounted on a ceramic substrate measuring 15x15x0.6mm.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	50	-	-	V	$I_C=100\mu\text{A}, I_E=0$
Collector to Emitter Breakdown Voltage ¹	$V_{(BR)CEO}$	50	-	-	V	$I_C=10\text{mA}, I_B=0$
Emitter to 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	$V_{CB}=40\text{V}, I_E=0$
Emitter Cut-Off Current	I_{EBO}	-	-	100	nA	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain ²	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	-	-		$V_{CE}=2\text{V}, I_C=1\text{A}$
		100	-	-		$V_{CE}=2\text{V}, I_C=2\text{A}$
		-	40	-		$V_{CE}=2\text{V}, I_C=6\text{A}$
Collector to Emitter Saturation Voltage ¹	$V_{CE(sat)}$	-	-	20	mV	$I_C=100\text{mA}, I_B=10\text{mA}$
		-	-	200		$I_C=1\text{A}, I_B=10\text{mA}$
		-	-	220		$I_C=2\text{A}, I_B=50\text{mA}$
Base to Emitter Saturation Voltage ¹	$V_{BE(sat)}$	-	-	1	V	$I_C=2\text{A}, I_B=50\text{mA}$
Base to Emitter On Voltage ¹	$V_{BE(on)}$	-	-	1	V	$I_C=2\text{A}, V_{CE}=2\text{V}$
Collector output capacitance	C_{ob}	-	-	20	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	$t_{(off)}$	-	750	-	ns	
Transition Frequency	f_T	100	-	-	MHz	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$

Note:

1. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2.0\%$