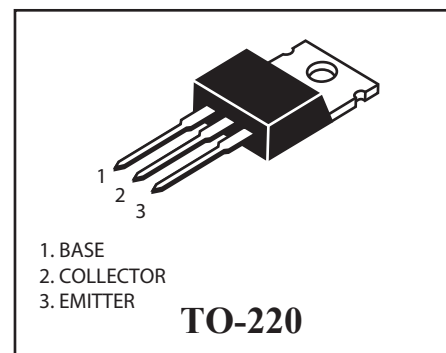
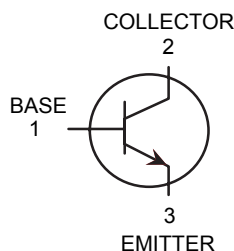


NPN Silicon Epitaxial Power Transistor

(Pb) Lead(Pb)-Free

Features:

- * DC Current Gain $h_{FE} = 40-320$ @ $I_C = 1.0A$
- * Low $V_{CE(sat)} \leq 1.0V(MAX)$ @ $I_C = 2.0A, I_B = 0.2A$
- * Complementary to NPN 2SB507



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$)

Rating	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	60	V
Collector to Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	3.0	A
Total Device Dissipation $T_A = 25^\circ C$ $T_C = 25^\circ C$ Derate above $25^\circ C$	P_D	1.75 30 0.24	W W/ $^\circ C$
Junction Temperature	T_J	+150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Max	Unit
Collector-Base Breakdown Voltage $I_C = 100\mu A, I_E = 0$	BV_{CBO}	60	-	-	V
Collector-Emitter Breakdown Voltage $I_C = 1mA, I_B = 0$	BV_{CEO}	60	-	-	V
Emitter-Base Breakdown Voltage $I_E = 100\mu A, I_C = 0$	BV_{EBO}	5.0	-	-	V
Collector Cut-Off Current $V_{CB} = 60V, I_E = 0$	I_{CBO}	-	-	100	μA
Emitter-Cut-Off Current $V_{EB} = 60V, I_E = 0$	I_{CEO}	-	-	1.0	mA
Emitter-Cut-Off Current $V_{EB} = 4.0V, I_C = 0$	I_{EBO}	-	-	100	μA

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

Characteristic	Symbol	Min	Typ	Max	Unit
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ON CHARACTERISTICS

DC Current Gain $V_{CE}=2\text{V}, I_C=1\text{A}$ $V_{CE}=2\text{V}, I_C=0.1\text{A}$	h_{FE1} h_{FE2}	40 40	- -	320 -	-
Collector-Emitter Saturation Voltage $I_C=2\text{A}, I_B=200\text{mA}$	$V_{CE(sat)}$	-	-	1.0	V
Base-Emitter On Voltage $V_{CE}=2\text{V}, I_C=1\text{A}$	V_{BE}	-	-	1.5	V
Transition Frequency $V_{CE}=5\text{V}, I_C=500\text{mA}$	f_T	-	8	-	MHz
Transition Frequency $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	C_{ob}	-	65	-	pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	C	D	E	F
Range	40-80	60-120	100-200	160-320

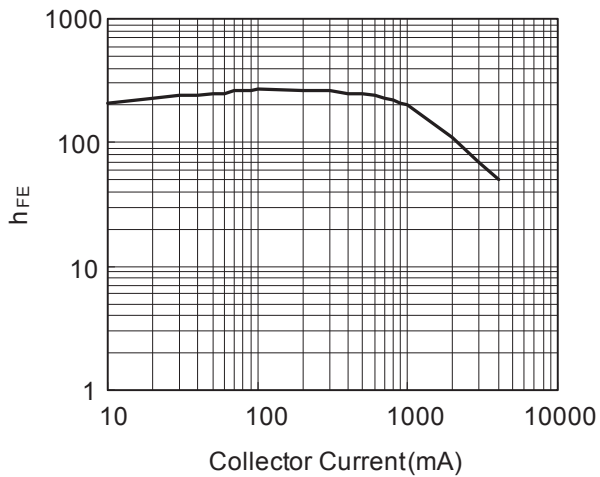


Fig.1 DC Current Gain

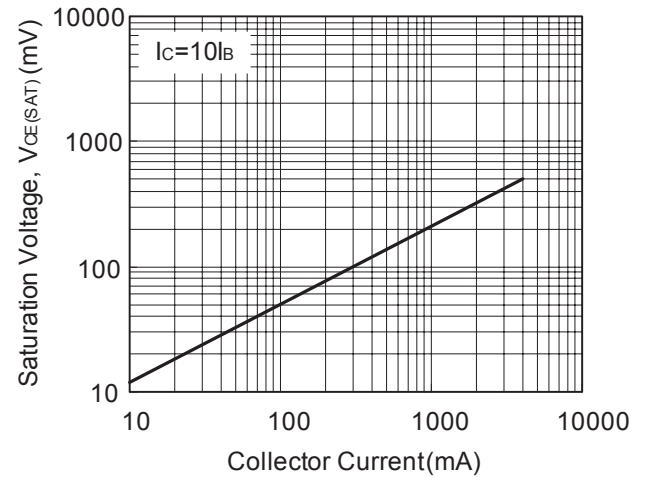


Fig.2 Saturation Voltage vs Collector Current

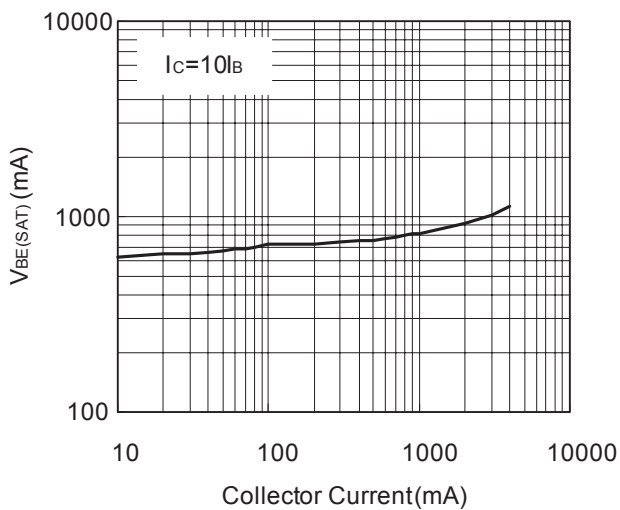


Fig.3 $V_{BE(sat)}$ vs I_C

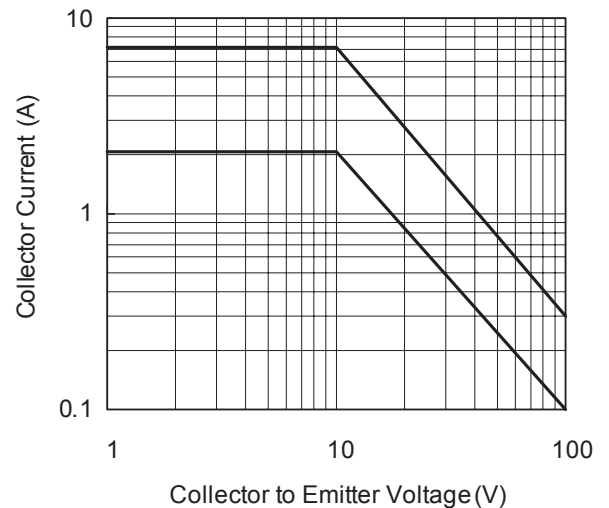


Fig.4 SOA

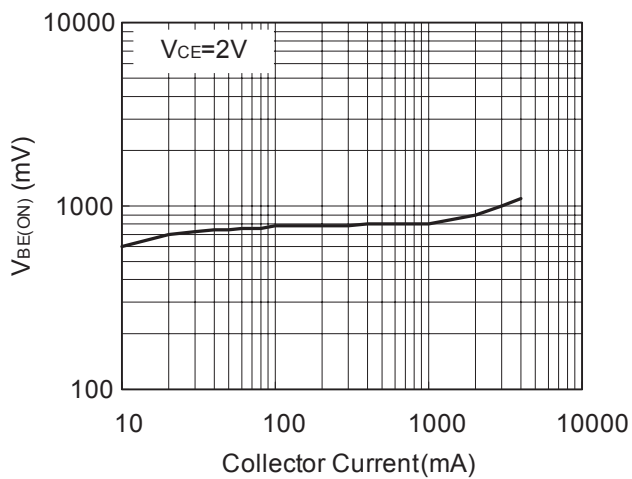
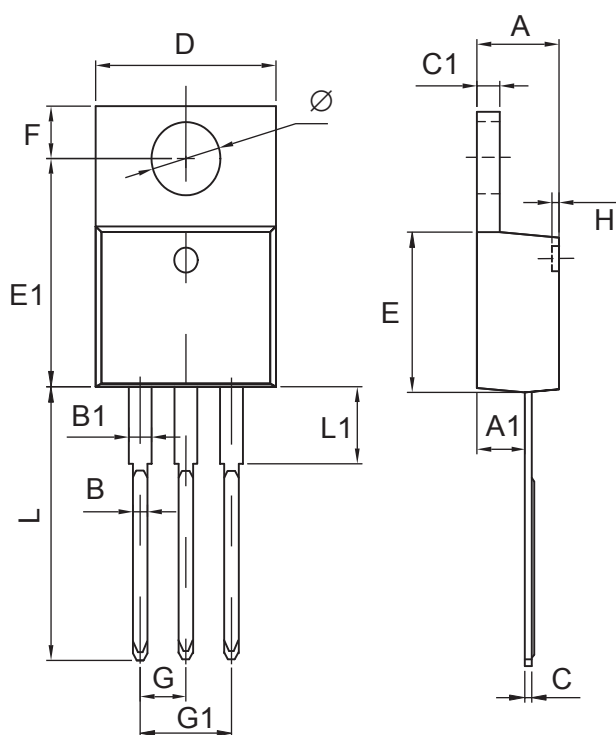


Fig.5 $V_{BE(on)}$ vs I_C

TO-220 Outline Dimensions

unit:mm



TO-220		
Dim	Min	Max
A	4.47	4.67
A1	2.52	2.82
B	0.71	0.91
B1	1.17	1.37
C	0.31	0.53
C1	1.17	1.37
D	10.01	10.31
E	8.50	8.90
E1	12.06	12.446
G	2.54 TYP	
G1	4.98	5.18
F	2.59	2.89
H	0.00	0.30
L	13.4	13.8
L1	3.56	3.96
Φ	3.73	3.93