



Micro Commercial Components

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2SD2012

NPN Silicon Power Transistors

Features

- High DC Current Gain: $h_{FE(1)}=100$ (Min.)
 - Low Saturation Voltage: $V_{CE(sat)}=1.0V$ (Max.)
 - High Power Dissipation: $P_C=25W$ ($T_C=25^\circ C$)
 - Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
 - Epoxy meets UL 94 V-0 flammability rating
 - Moisture Sensitivity Level 1
- Maximum Ratings
- Mounting Torque: 5 in-lbs Maximum

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7.0	V
I_C	Collector Current	3.0	A
I_B	Base Current	0.5	A
P_C	Collector power dissipation $T_A=25^\circ C$ $T_C=25^\circ C$	2.0 25	W
T_J	Junction Temperature	-55 to +150	$^\circ C$
T_{STG}	Storage Temperature	-55 to +150	$^\circ C$

Electrical Characteristics @ 25°C Unless Otherwise Specified

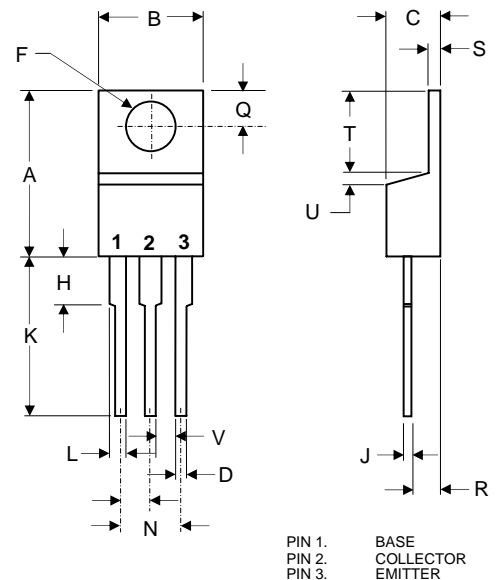
Symbol	Parameter	Min	Typ	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=50mA$, $I_B=0$)	60	---	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=60Vdc$, $I_E=0$)	---	---	100	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=7.0Vdc$, $I_C=0$)	---	---	100	μA

ON CHARACTERISTICS

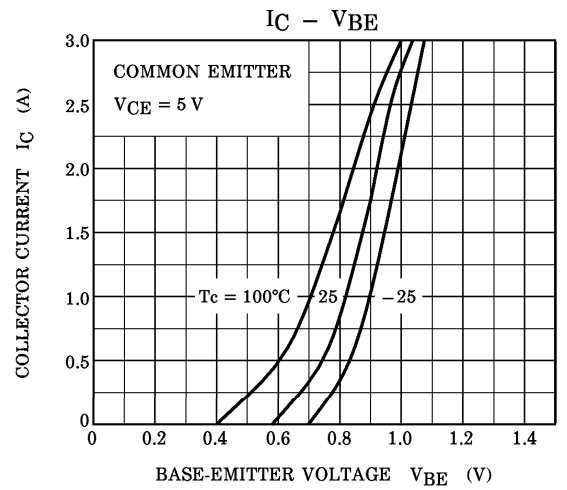
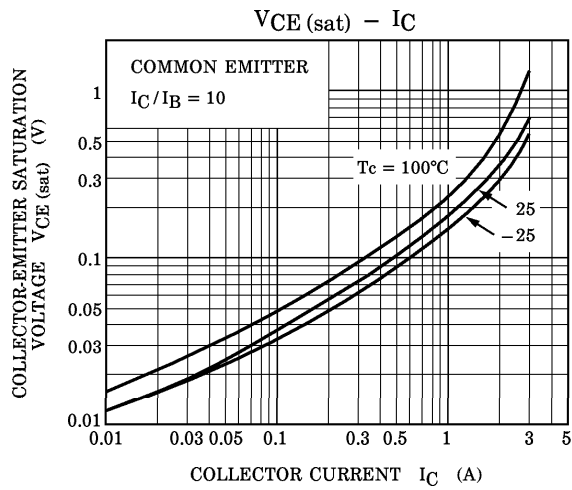
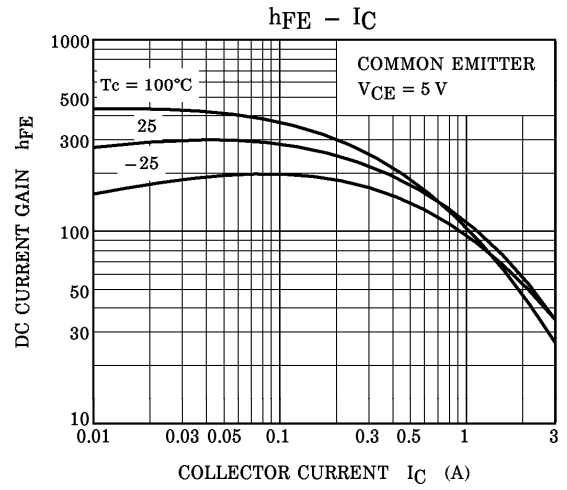
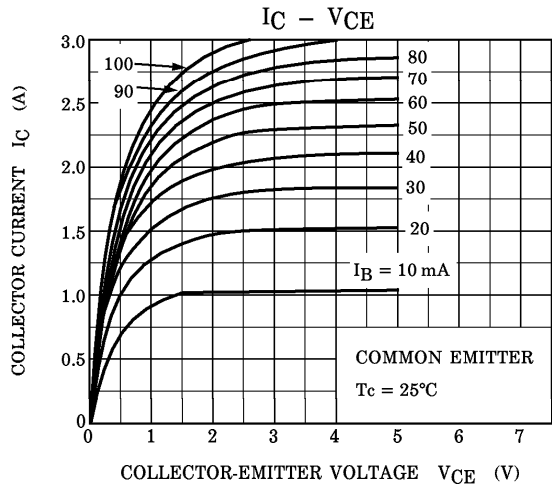
$h_{FE(1)}$	Forward Current Transfer ratio ($I_C=0.5A$, $V_{CE}=5.0Vdc$)	100	---	320	---
$h_{FE(2)}$	Forward Current Transfer ratio ($I_C=2.0A$, $V_{CE}=5.0Vdc$)	20	---	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=2.0A$, $I_B=0.2A$)	---	0.4	1.0	Vdc
V_{BE}	Base-Emitter Saturation Voltage ($I_C=0.5A$, $V_{CE}=5.0Vdc$)	---	0.75	1.0	Vdc
f_T	Transition Frequency ($V_{CE}=5.0Vdc$, $I_C=0.5A$)	---	3.0	---	MHz
C_{ob}	Collector Output Capacitance ($V_{CB}=10Vdc$, $I_C=0$, $f=1.0MHz$)	---	35	---	pF

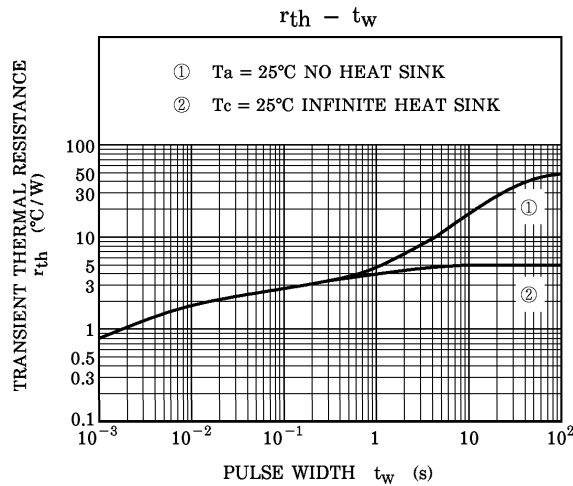
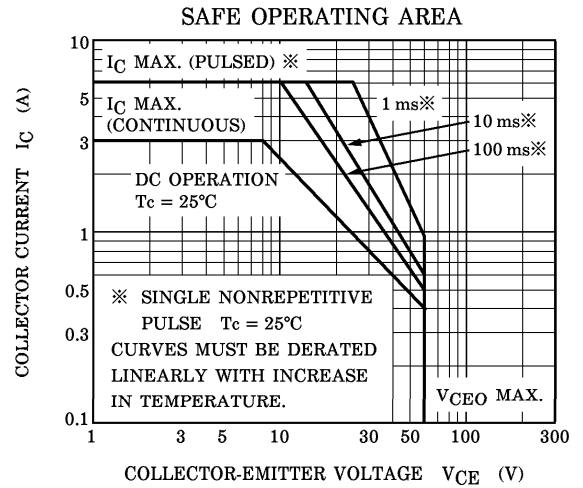
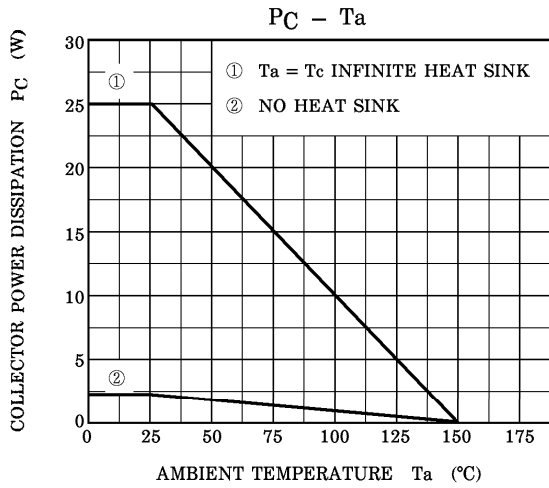
Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

TO-220



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.139	.161	3.53	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	----	.050	----	1.27	
V	.045	----	1.15	----	







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Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1Kpcs/Box

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