Ordering number : EN930E

2SD1207

Bipolar Transistor
50V, 2A, Low VCE(sat) NPN Single MP

ON Semiconductor®

http://onsemi.com

Applications
- Power supplies, relay drivers, lamp drivers, and automotive wiring

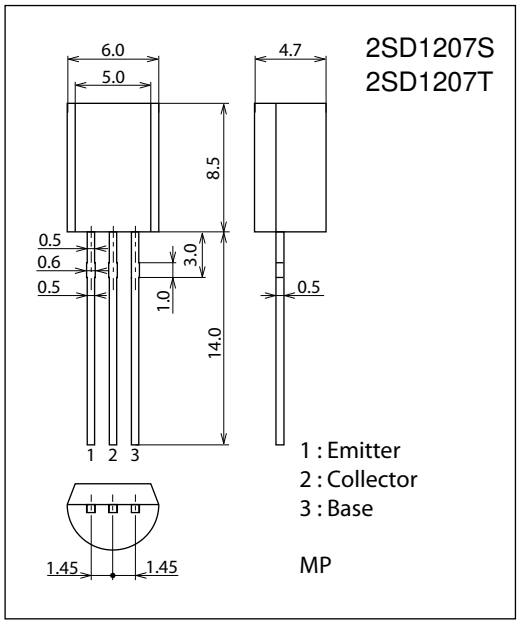
Features
- FBET and MBIT processed
- Low saturation voltage
- Large current capacity and wide SOA

Specifications
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		60	V
Collector to Emitter Voltage	V_{CEO}		50	V
Emitter to Base Voltage	V_{EBO}		6	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Collector Dissipation	PC		1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

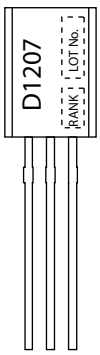
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions
unit : mm (typ)
7520-002

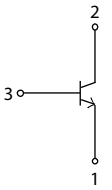


Product & Package Information
- Package : MP
- JEITA, JEDEC : SC-51, TO-92(1-WATT), TO-226AE
- Minimum Packing Quantity : 1,000 pcs./box

Marking



Electrical Connection



Electrical Characteristics at Ta = 25°C

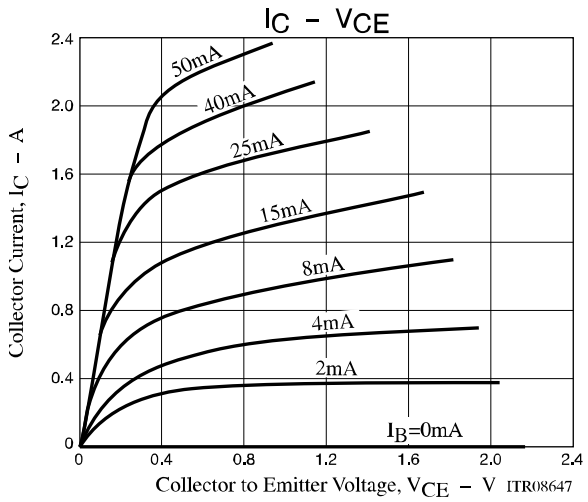
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=50V, I_E=0A			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=100mA	140		400	
	$h_{FE}2$	V_{CE}=2V, I_C=1.5A	40			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		150		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		12		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C=1A, I_B=50mA		0.15	0.4	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_C=1A, I_B=50mA		0.9	1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	60			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	6			V

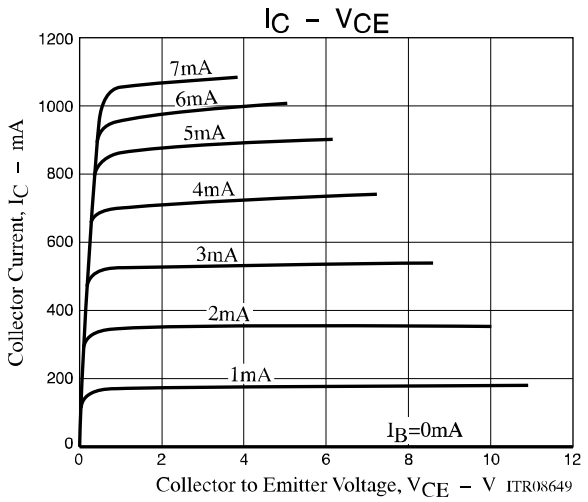
*: The 2SD1207 is graded as follows by h_{FE} at 100mA :

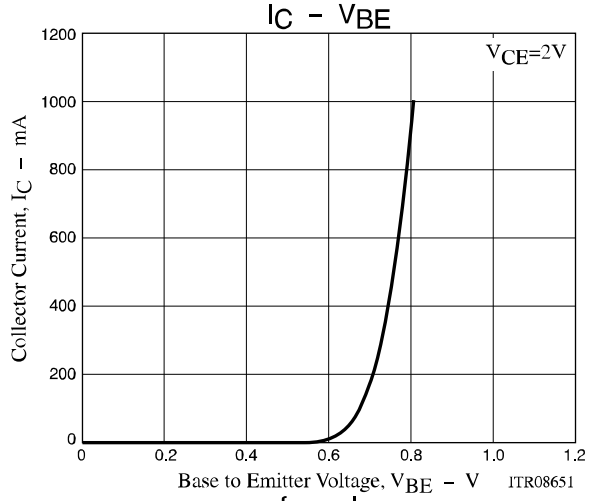
Rank	S	T
h_{FE}	140 to 280	200 to 400

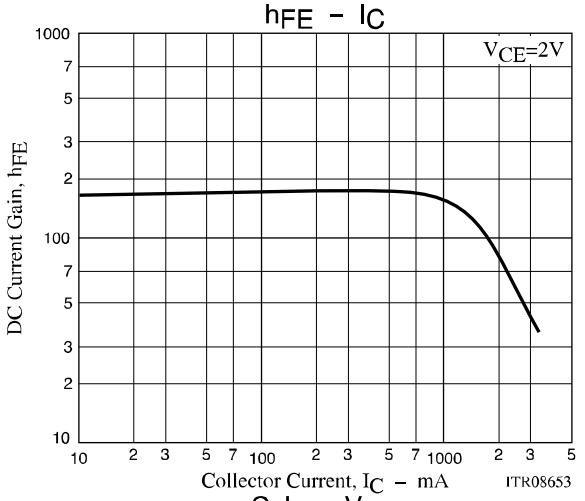
Ordering Information

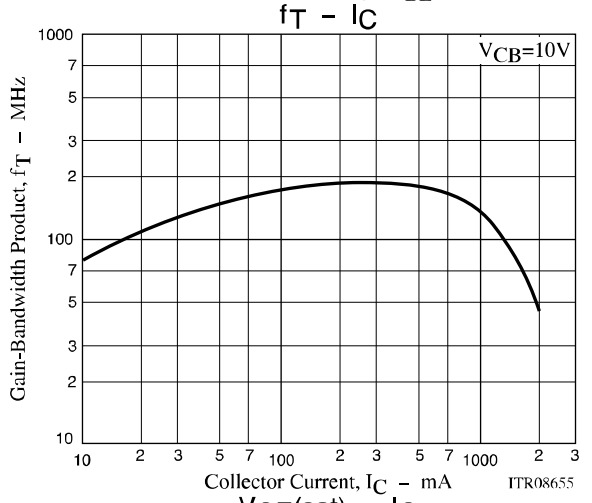
Device	Package	Shipping	Memo
2SD1207S	MP	500pcs./bag	Pb Eree
2SD1207S-AE		1,000pcs./box	
2SD1207T		500pcs./bag	
2SD1207T-AE		1,000pcs./box	

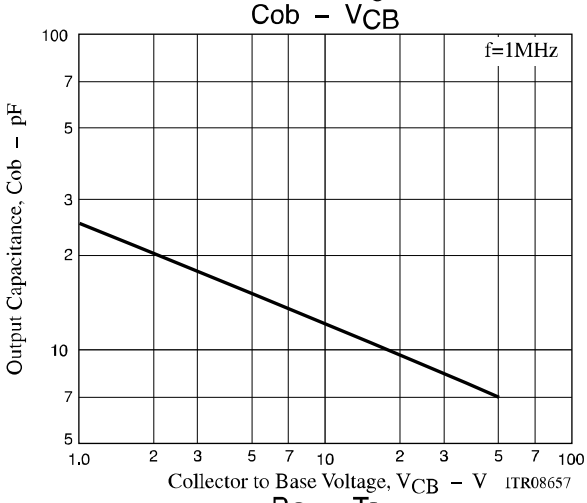


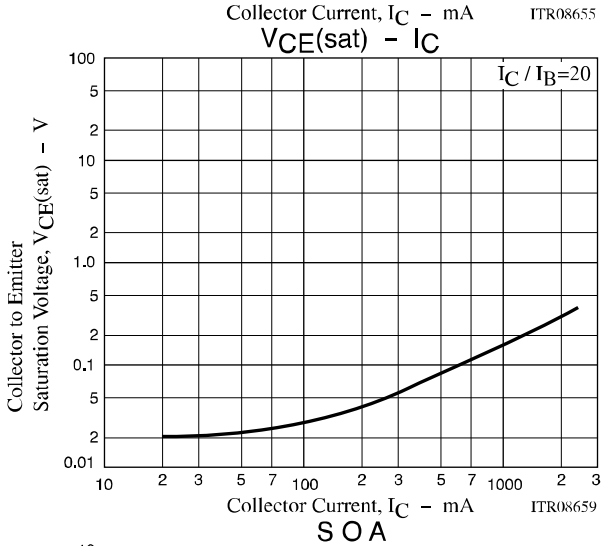


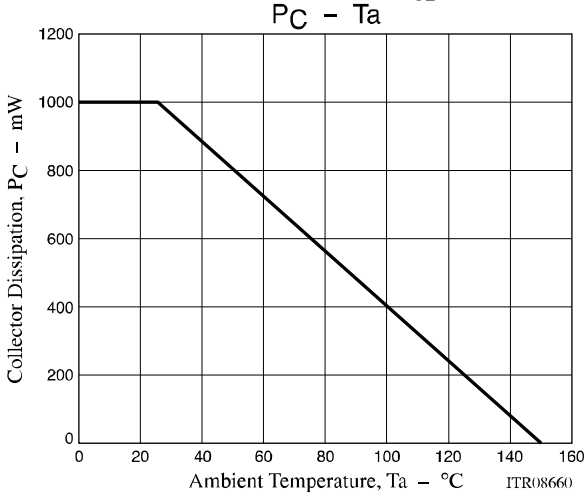

IC – VBE
VCE=2V
Collector Current, IC – mA
Base to Emitter Voltage, VBE – V
ITR08651

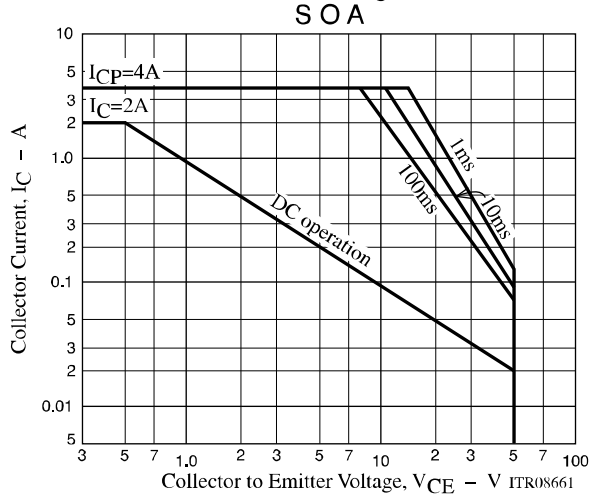

hFE – IC
VCE=2V
DC Current Gain, hFE
Collector Current, IC – mA
ITR08653


fT – IC
VCB=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR08655


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V
ITR08657

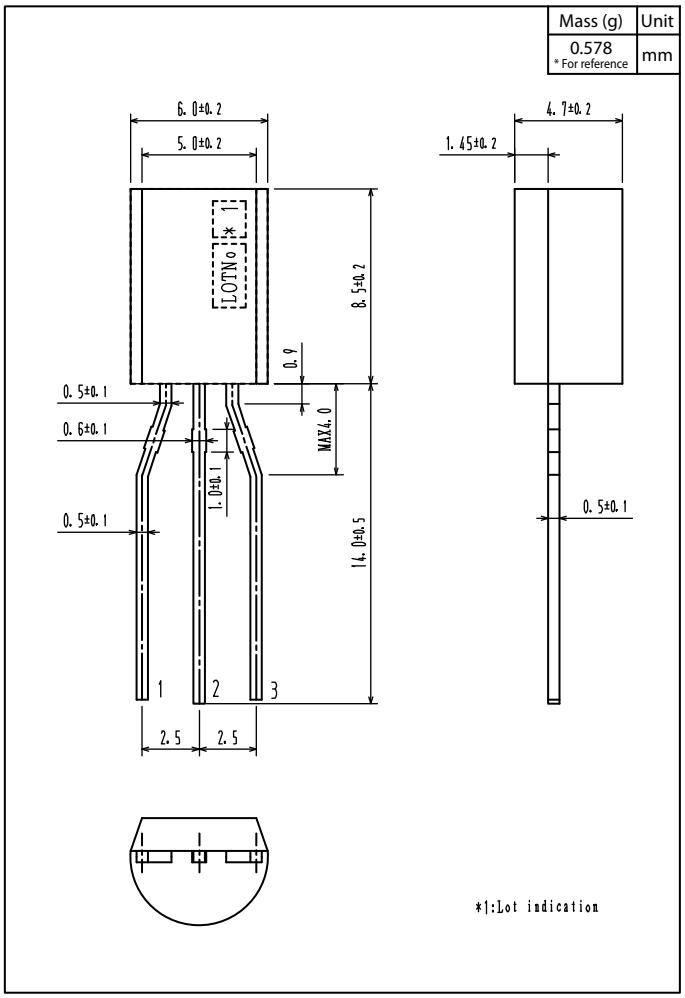

VCE(sat) – IC
IC / IB=20
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – mA
ITR08659


PC – Ta
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
ITR08660


SOA
ICP=4A
IC=2A
1ms
10ms
100ms
DC operation
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V
ITR08661

Outline Drawing

2SD1207S-AE
2SD1207T-AE



Outline Drawing

2SD1207S
2SD1207T