

NSS35200CF8T1G

High Current Surface Mount PNP Silicon Low V_{CE-SAT} Switching Transistor for Load Management in Portable Applications

- This is a Pb-Free Device

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Rating	Symbol	Max	Unit
Collector-Emitter Voltage	V_{CEO}	-35	Vdc
Collector-Base Voltage	V_{CBO}	-55	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current – Continuous	I_C	-2.0	Adc
Collector Current – Peak	I_{CM}	-7.0	A
Electrostatic Discharge	ESD	HBM Class 3 MM Class C	

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D (Note 1)	635	mW
		5.1	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$ (Note 1)	200	$^\circ\text{C}/\text{W}$
Total Device Dissipation $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D (Note 2)	1.35	W
		11	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$ (Note 2)	90	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Lead #1	$R_{\theta JL}$	15	$^\circ\text{C}/\text{W}$
Total Device Dissipation (Single Pulse < 10 sec)	$P_{D\text{single}}$ (Notes 2 & 3)	2.75	W
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

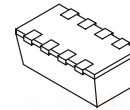
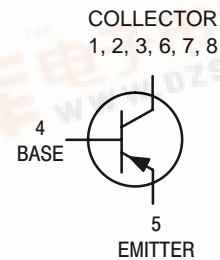
- FR-4 @ 100 mm², 1 oz copper traces.
- FR-4 @ 500 mm², 1 oz copper traces.
- Thermal response.



ON Semiconductor®

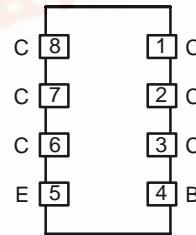
<http://onsemi.com>

35 VOLTS
2.0 AMPS
PNP TRANSISTOR

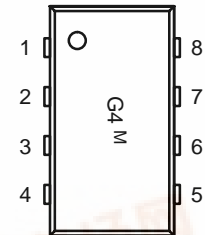


ChipFET™
CASE 1206A
STYLE 4

PIN CONNECTIONS



MARKING DIAGRAM



G4 = Specific Device Code
M = Month Code

ORDERING INFORMATION

Device	Package	Shipping†
NSS35200CF8T1G	ChipFET (Pb-Free)	3000/ Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



NSS35200CF8T1G

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typical	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage (I _C = -10 mAdc, I _B = 0)	V _{(BR)CEO}	-35	-45	-	Vdc
Collector–Base Breakdown Voltage (I _C = -0.1 mAdc, I _E = 0)	V _{(BR)CBO}	-55	-65	-	Vdc
Emitter–Base Breakdown Voltage (I _E = -0.1 mAdc, I _C = 0)	V _{(BR)EBO}	-5.0	-7.0	-	Vdc
Collector Cutoff Current (V _{CB} = -35 Vdc, I _E = 0)	I _{CBO}	-	-0.03	-0.1	μAdc
Collector–Emitter Cutoff Current (V _{CES} = -35 Vdc)	I _{CES}	-	-0.03	-0.1	μAdc
Emitter Cutoff Current (V _{EB} = -6.0 Vdc)	I _{EBO}	-	-0.01	-0.1	μAdc
ON CHARACTERISTICS					
DC Current Gain (Note 4) (I _C = -1.0 A, V _{CE} = -2.0 V) (I _C = -1.5 A, V _{CE} = -2.0 V) (I _C = -2.0 A, V _{CE} = -2.0 V)	h _{FE}	100 100 100	200 200 200	- 400 -	
Collector–Emitter Saturation Voltage (Note 4) (I _C = -0.1 A, I _B = -0.010 A) (I _C = -1.0 A, I _B = -0.010 A) (I _C = -2.0 A, I _B = -0.02 A)	V _{CE(sat)}	- - -	- - -	-0.10 -0.15 -0.30	V
Base–Emitter Saturation Voltage (Note 4) (I _C = -1.0 A, I _B = -0.01 A)	V _{BE(sat)}	-	-0.68	-0.85	V
Base–Emitter Turn–on Voltage (Note 4) (I _C = -2.0 A, V _{CE} = -3.0 V)	V _{BE(on)}	-	-0.81	-0.875	V
Cutoff Frequency (I _C = -100 mA, V _{CE} = -5.0 V, f = 100 MHz)	f _T	100	-	-	MHz
Input Capacitance (V _{EB} = -0.5 V, f = 1.0 MHz)	C _{ibo}	-	600	650	pF
Output Capacitance (V _{CB} = -3.0 V, f = 1.0 MHz)	C _{obo}	-	85	100	pF
Turn–on Time (V _{CC} = -10 V, I _{B1} = -100 mA, I _C = -1 A, R _L = 3 Ω)	t _{on}	-	35	-	nS
Turn–off Time (V _{CC} = -10 V, I _{B1} = I _{B2} = -100 mA, I _C = 1 A, R _L = 3 Ω)	t _{off}	-	225	-	nS

4. Pulsed Condition: Pulse Width = 300 μsec, Duty Cycle ≤ 2%

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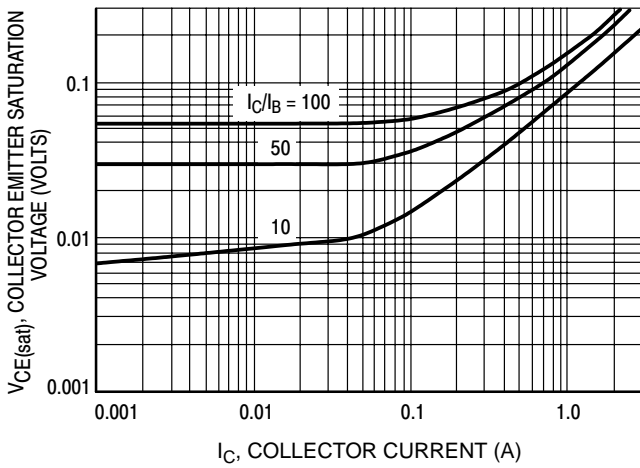


Figure 1. Collector Emitter Saturation Voltage versus Collector Current

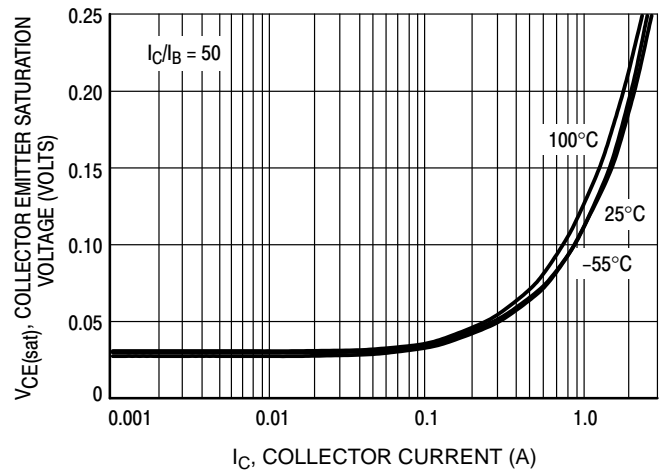


Figure 2. Collector Emitter Saturation Voltage versus Collector Current

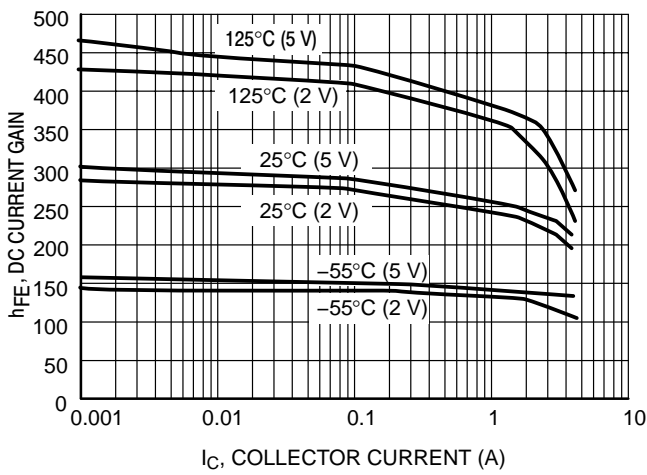


Figure 3. DC Current Gain versus Collector Current

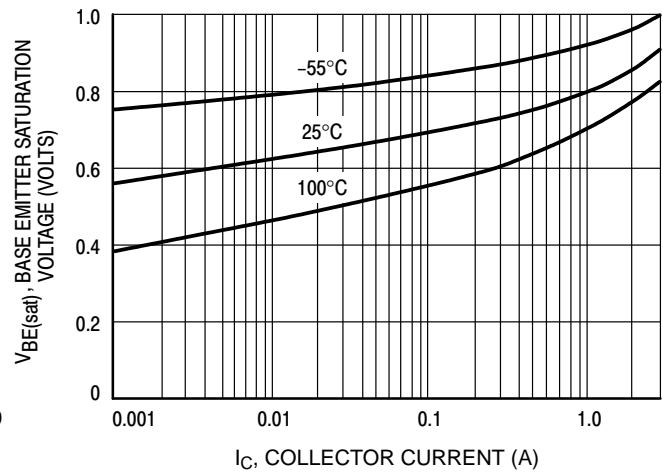


Figure 4. Base Emitter Saturation Voltage versus Collector Current

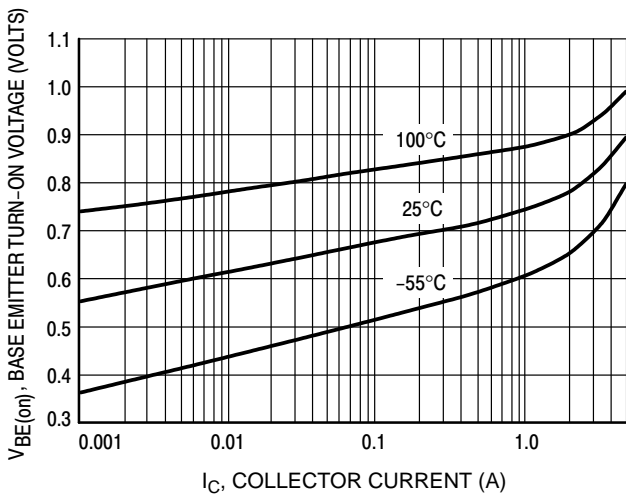


Figure 5. Base Emitter Turn-On Voltage versus Collector Current

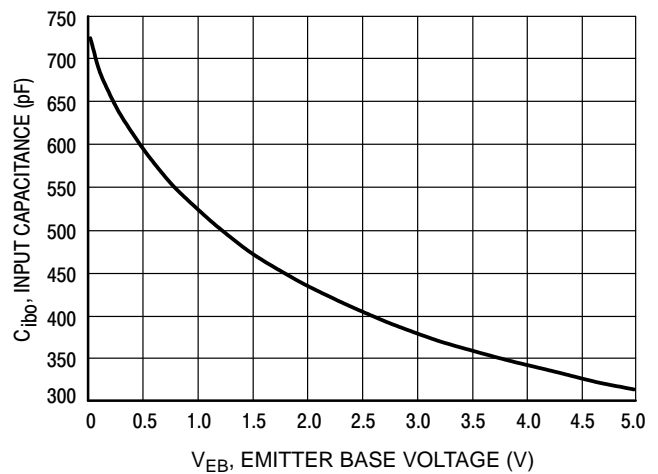


Figure 6. Input Capacitance

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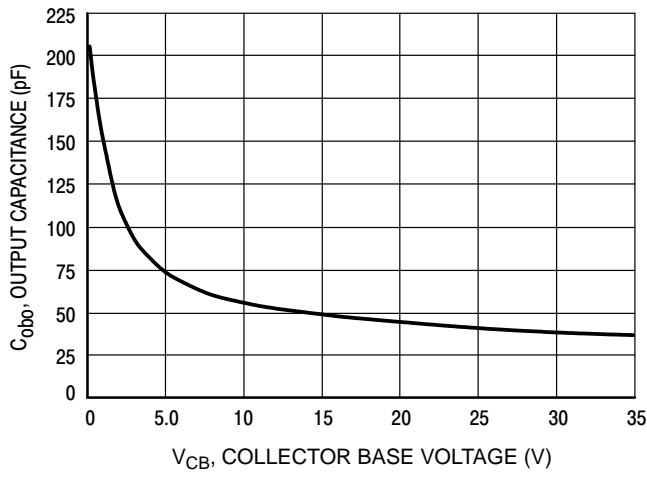


Figure 7. Output Capacitance

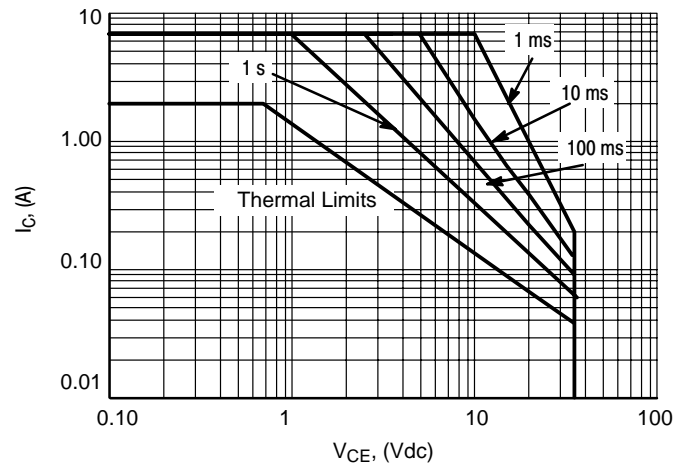


Figure 8. Safe Operating Area

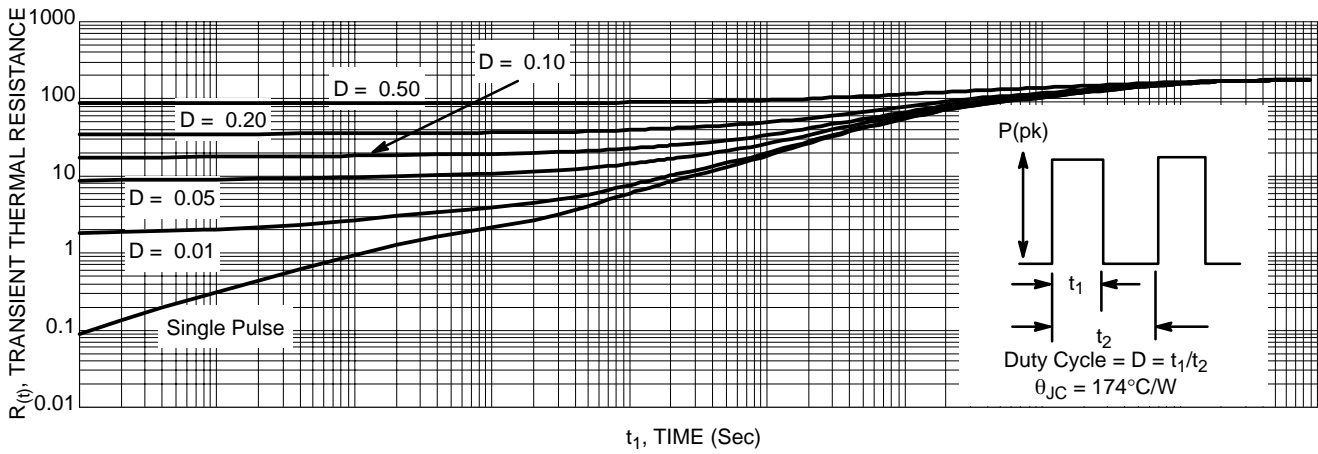
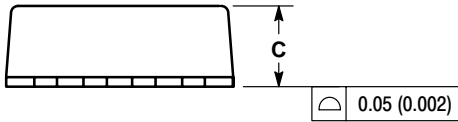
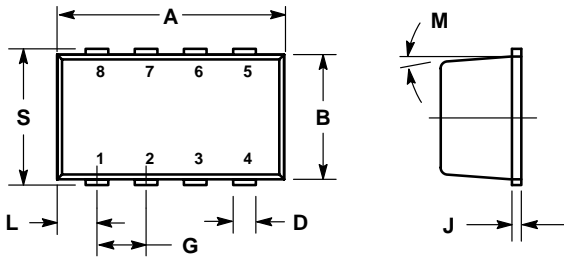


Figure 9. Normalized Thermal Response

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PACKAGE DIMENSIONS

ChipFET
CASE 1206A-03
ISSUE PRELIMINARY



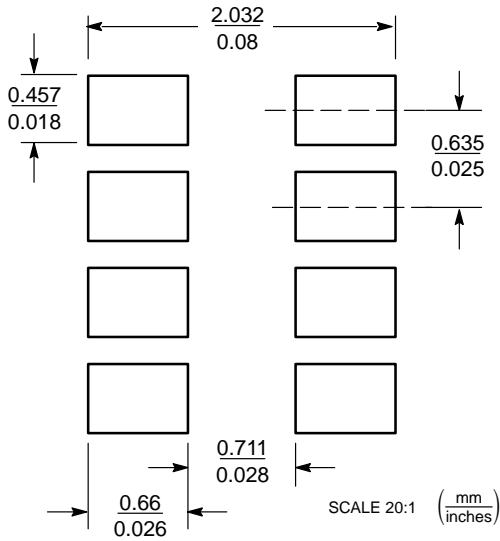
STYLE 4:
PIN 1. COLLECTOR
2. COLLECTOR
3. COLLECTOR
4. BASE
5. EMITTER
6. COLLECTOR
7. COLLECTOR
8. COLLECTOR

NOTES:

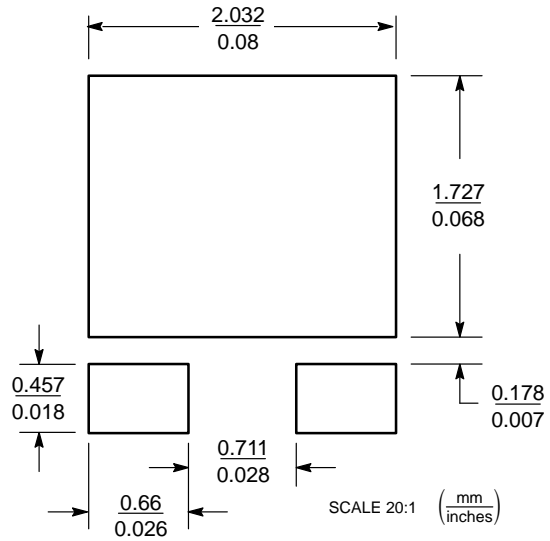
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MOLD GATE BURRS SHALL NOT EXCEED 0.13 MM PER SIDE.
4. LEADFRAME TO MOLDED BODY OFFSET IN HORIZONTAL AND VERTICAL SHALL NOT EXCEED 0.08 MM.
5. DIMENSIONS A AND B EXCLUSIVE OF MOLD GATE BURRS.
6. NO MOLD FLASH ALLOWED ON THE TOP AND BOTTOM LEAD SURFACE.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.95	3.10	0.116	0.122
B	1.55	1.70	0.061	0.067
C	1.00	1.10	0.039	0.043
D	0.25	0.35	0.010	0.014
G	0.65 BSC		0.025 BSC	
J	0.10	0.20	0.004	0.008
K	0.28	0.42	0.011	0.017
L	0.55 BSC		0.022 BSC	
M	5° NOM		5° NOM	
S	1.80	2.00	0.072	0.080

SOLDERING FOOTPRINT*



Basic




Style 4

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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