



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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200V N-CHANNEL ENHANCEMENT MODE VERTICAL DMOSFET

Features

- $BV_{DSS} > 200V$
- $R_{DS(ON)} \leq 23\Omega$ @ $V_{GS} = 2.6V$
- $I_D = 120mA$ Maximum Continuous Drain Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

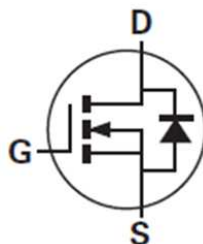
Mechanical Data

- Case: E-Line (TO-92 Compatible)
- Case Material: Molded Plastic, "Green" Molding Compound
UL Flammability Rating 94V-0
- Terminals: Finish - Matte Tin Plated Leads, Solderable per
MIL-STD-202, Method 208 @3
- Weight: 0.159 grams (Approximate)

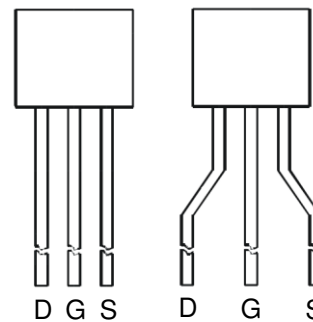
E-Line
(TO-92 Compatible)



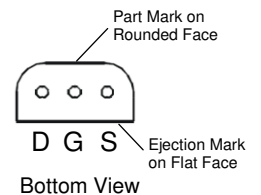
Flat Face View



Device Symbol



Rounded Face View



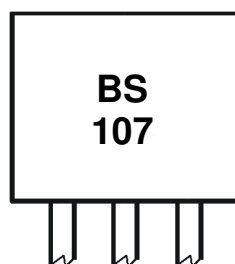
Bottom View

Ordering Information (Note 4)

Product	Marking	Package	Leads	Quantity
BS107P	BS107	E-Line	Straight	4,000 Loose in a Box
BS107PSTZ	BS107	E-Line	Joggled	2,000 Taped per Ammo Box

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



Rounded Face View

BS107 = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	200	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	120	mA
Pulsed Drain Current	I _{DM}	2	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	500	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	200	°C/W
Thermal Resistance, Junction to Leads (Note 6)	R _{θJL}	71	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

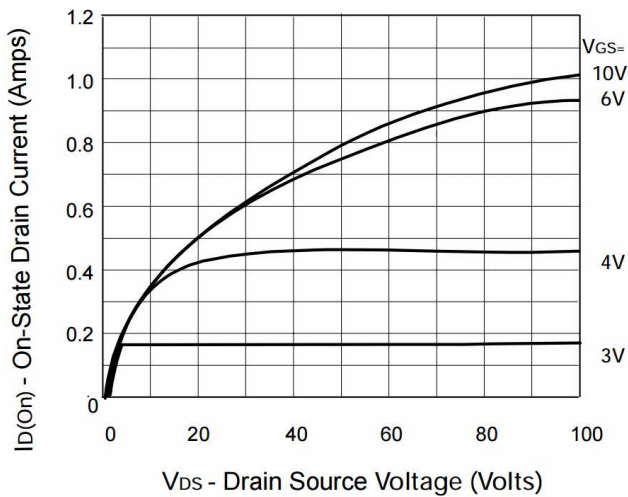
- Notes:
- For a through-hole device mounted on the minimum recommended pad layout with 12mm lead length from the bottom of package to the single-sided FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 - Thermal resistance from junction to solder-point at the seating plane (2.5mm from the bottom of package along the drain lead).

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

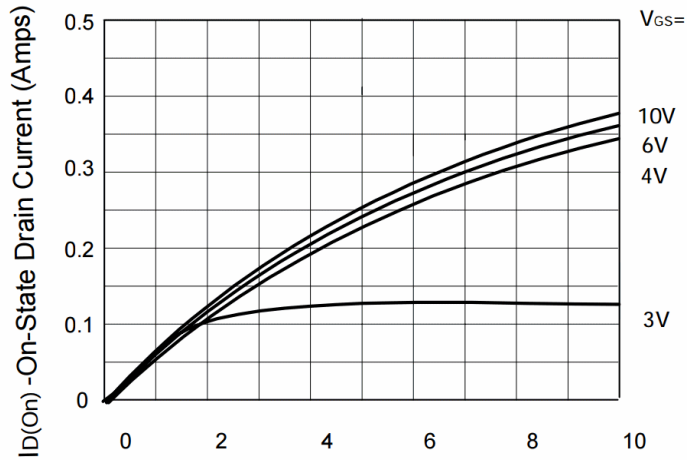
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DS}	200	230	—	V	I _D = 100μA, V _{GS} = 0V
Zero Gate Voltage Drain Current	I _{DSS}	—	—	30	nA	V _{DS} = 130V, V _{GS} = 0V
Drain Cut-Off Current	I _{DSX}	—	—	1	μA	V _{DS} = 70V, V _{GS} = 0.2V
Gate-Source Leakage	I _{GSS}	—	—	±10	nA	V _{GS} = ±15V, V _{DS} = 0V
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	1.0	—	3.0	V	I _D = 1mA, V _{DS} = V _{GS}
Static Drain-Source On-Resistance (Note 7)	R _{DS(ON)}	—	15	23	Ω	V _{GS} = 2.6V, I _D = 25mA
			—	30		V _{GS} = 5V, I _D = 100mA
Forward Transconductance (Notes 7 & 9)	g _{fs}	100	—	—	mS	V _{DS} = 25V, I _D = 250mA
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	—	—	85	pF	V _{DS} = 25V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	—	20		
Reverse Transfer Capacitance	C _{rss}	—	—	7		
Turn-On Delay Time (Note 8)	t _{D(ON)}	—	—	7	ns	V _{DD} = 25V, I _D = 250mA
Turn-On Rise Time (Note 8)	t _R	—	—	8		
Turn-Off Delay Time (Note 8)	t _{D(OFF)}	—	—	16		
Turn-Off Fall Time (Note 8)	t _F	—	—	8		

- Notes:
- Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.
 - Switching characteristics are independent of operating junction temperature. Switching times are measured with 50Ω source impedance and <5ns rise time on a pulse generator.
 - For design aid only, not subject to production testing.

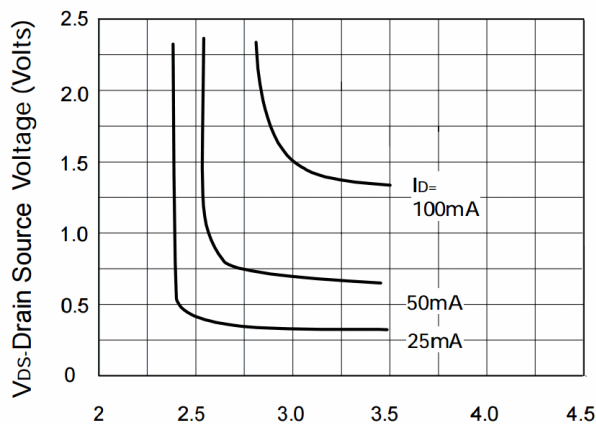
Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)



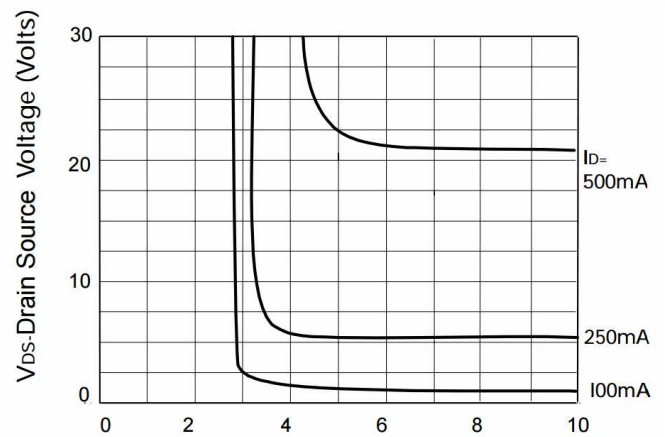
Output Characteristics



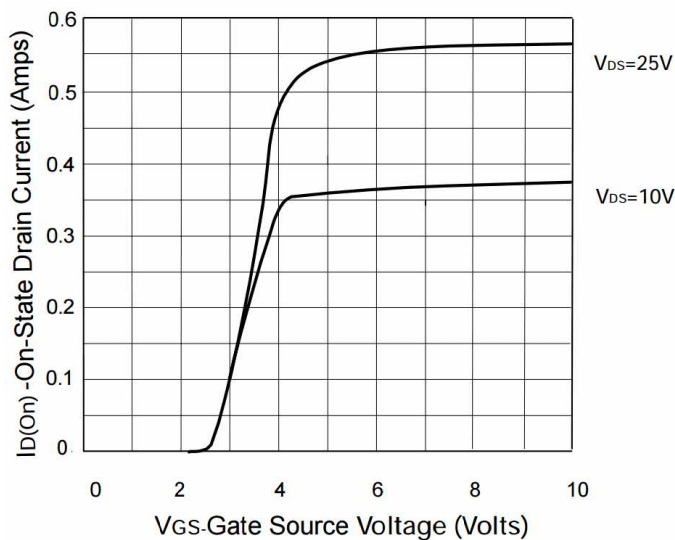
Saturation Characteristics



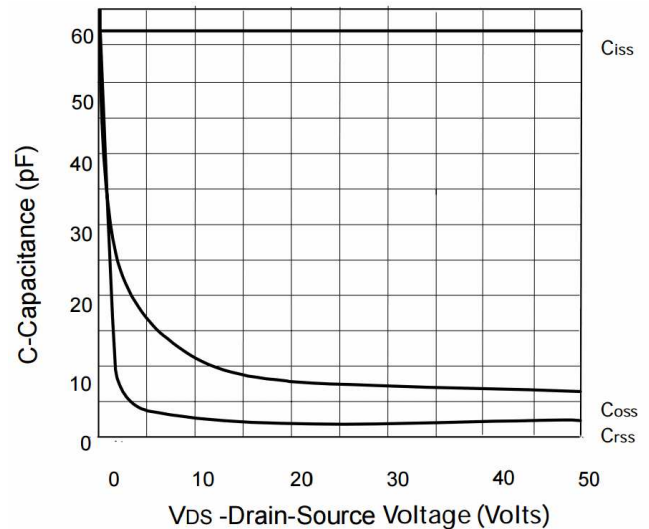
Voltage Saturation Characteristics



Voltage Saturation Characteristics



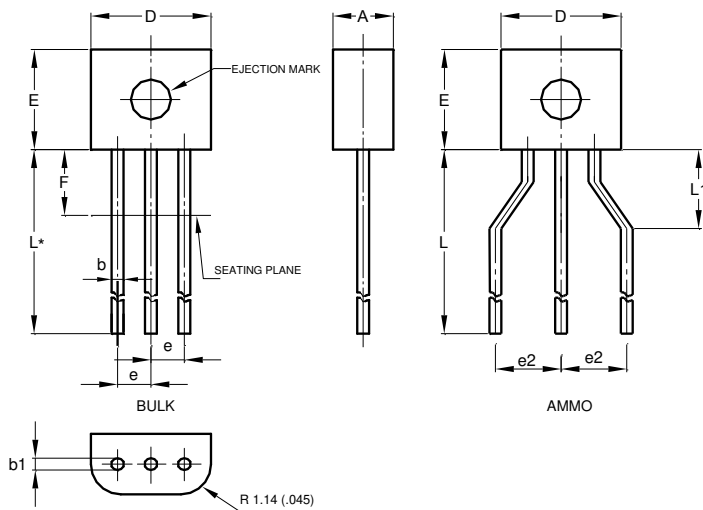
Transfer characteristics



Capacitance v drain-source voltage

Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



E-Line			
Dim	Min	Max	Typ
A	2.16	2.41	—
b	0.41	0.495	—
b1	0.41	0.495	—
D	4.37	4.77	—
E	3.61	4.01	—
e	—	—	1.27
e2	—	—	2.54
F	—	2.50	—
L	13.00	13.97	—
L1	2.50	3.50	—
All Dimensions in mm			

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