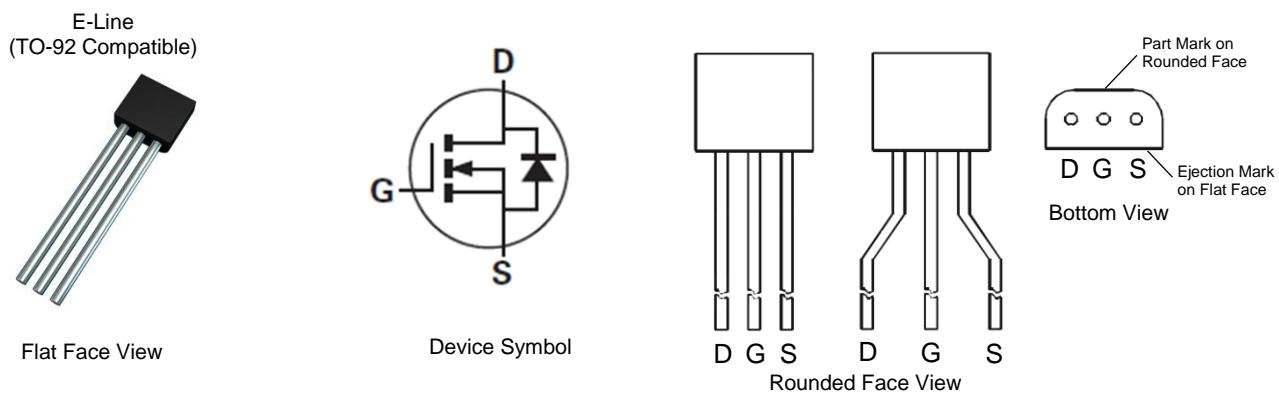


## Features

- $BV_{DSS} > 200V$
- $R_{DS(ON)} \leq 23\Omega$  @  $V_{GS} = 2.6V$
- $I_D = 120mA$  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 (E3)
- Weight: 0.159 grams (Approximate)



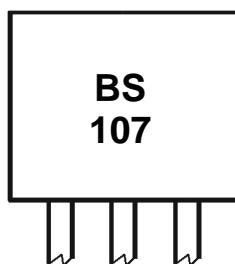
## Ordering Information (Note 4)

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](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



BS107 = Product Type Marking Code

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	200	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	120	mA
Pulsed Drain Current	$I_{DM}$	2	A

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

Characteristic	Symbol	Value	Unit
Power Dissipation	$P_D$	500	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Leads	$R_{\theta JL}$	71	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

Notes:

- 5. 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.
- 6. Thermal resistance from junction to solder-point at the seating plane (2.5mm from the bottom of package along the drain lead).

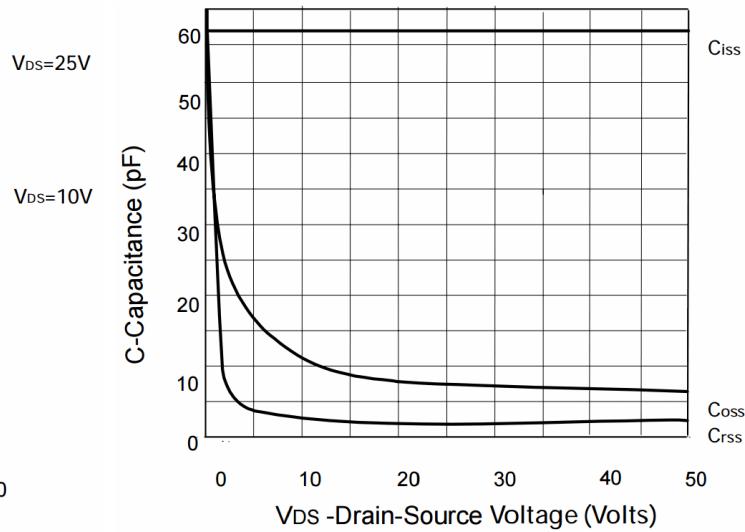
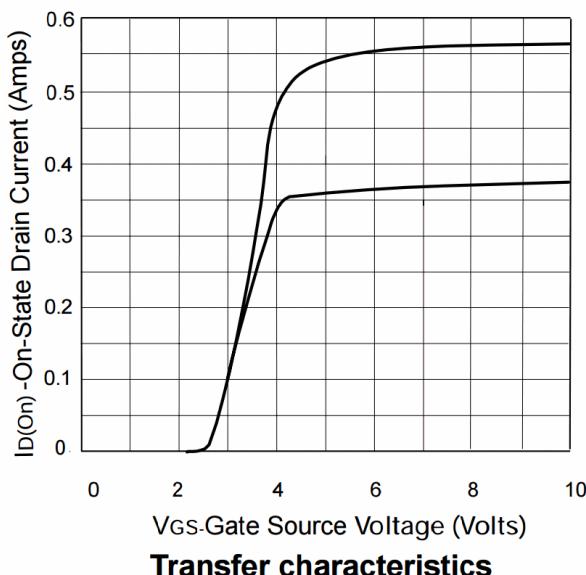
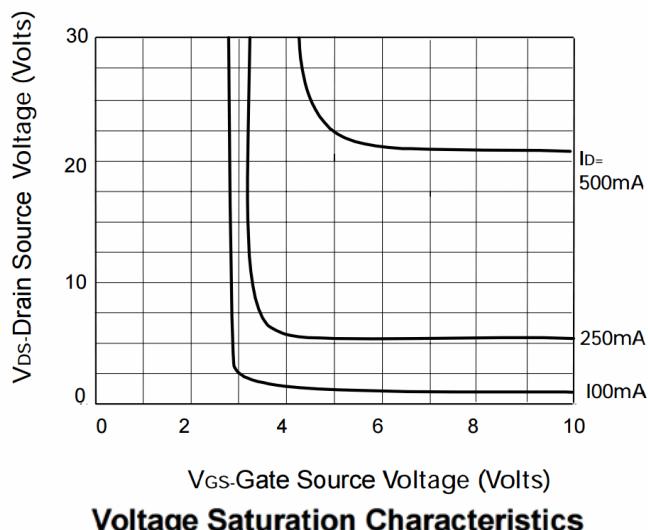
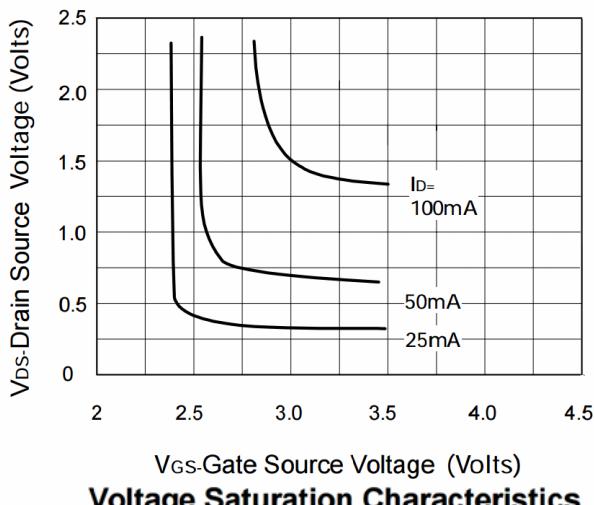
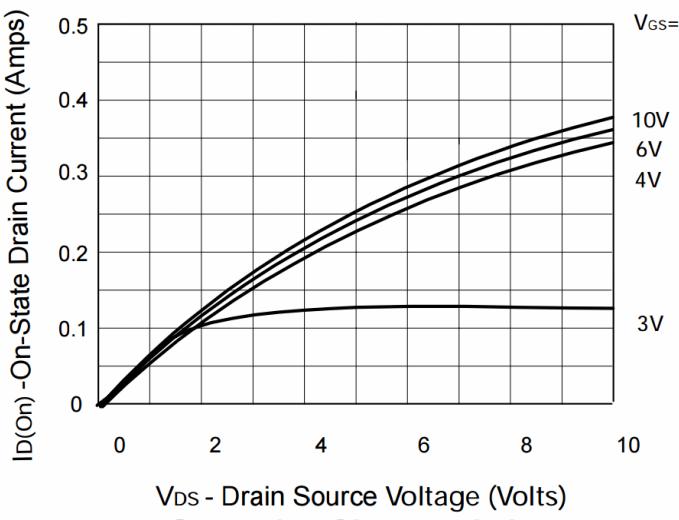
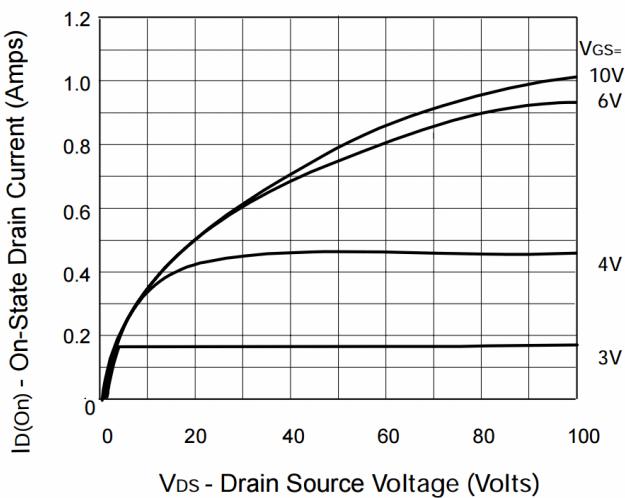
**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	200	230	—	V	$I_D = 100\mu\text{A}, V_{GS} = 0\text{V}$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	30	nA	$V_{DS} = 130\text{V}, V_{GS} = 0\text{V}$
Drain Cut-Off Current	$I_{DSX}$	—	—	1	$\mu\text{A}$	$V_{DS} = 70\text{V}, V_{GS} = 0.2\text{V}$
Gate-Source Leakage	$I_{GSS}$	—	—	$\pm 10$	nA	$V_{GS} = \pm 15\text{V}, V_{DS} = 0\text{V}$
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	1.0	—	3.0	V	$I_D = 1\text{mA}, V_{DS} = V_{GS}$
Static Drain-Source On-Resistance (Note 7)	$R_{DS(\text{ON})}$	—	15	23	$\Omega$	$V_{GS} = 2.6\text{V}, I_D = 25\text{mA}$
		—	—	30		$V_{GS} = 5\text{V}, I_D = 100\text{mA}$
Forward Transconductance (Notes 7 & 9)	$g_{fs}$	100	—	—	mS	$V_{DS} = 25\text{V}, I_D = 250\text{mA}$
<b>DYNAMIC CHARACTERISTICS</b> (Note 9)						
Input Capacitance	$C_{iss}$	—	—	85	pF	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}$ $f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	—	20		
Reverse Transfer Capacitance	$C_{rss}$	—	—	7		
Turn-On Delay Time (Note 8)	$t_{D(\text{ON})}$	—	—	7	ns	$V_{DD} = 25\text{V}, I_D = 250\text{mA}$
Turn-On Rise Time (Note 8)	$t_R$	—	—	8		
Turn-Off Delay Time (Note 8)	$t_{D(\text{OFF})}$	—	—	16		
Turn-Off Fall Time (Note 8)	$t_F$	—	—	8		

Notes:

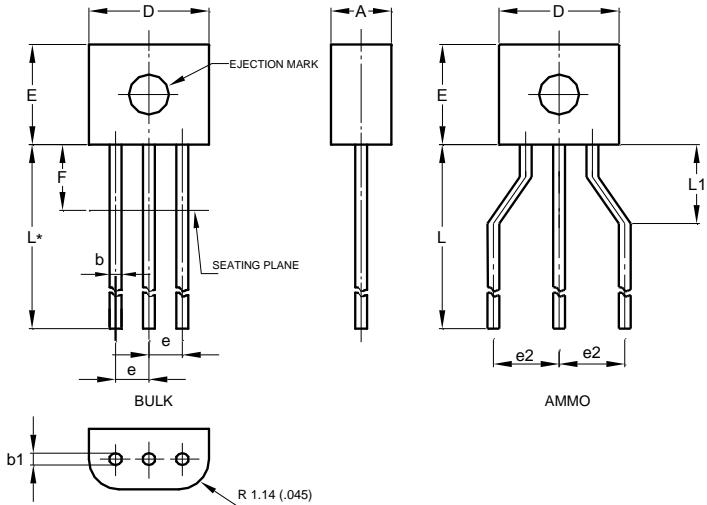
- 7. Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ . Duty cycle  $\leq 2\%$ .
- 8. Switching characteristics are independent of operating junction temperature. Switching times are measured with  $50\Omega$  source impedance and  $<5\text{ns}$  rise time on a pulse generator.
- 9. For design aid only, not subject to production testing.

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



## Package Outline Dimensions

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



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

All Dimensions in mm

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# OCEAN CHIPS

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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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## JONHON

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