



## SSC8LA12GT4

### N-Channel Enhancement Mode MOSFET

#### ➤ Features

V <sub>DS</sub>	V <sub>GS</sub>	R <sub>DS(ON)</sub>	I <sub>D</sub>
100V	±20V	3.7mΩ@10V	150A
		4.9mΩ@4V5	

#### ➤ Description

This device is N-Channel enhancement MOSFET. Uses SGT technology and design to provide excellent RDSON with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

**100% UIS + ΔVDS + Rg Tested!**

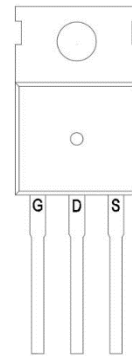
#### ➤ Applications

- Motor Drive Control
- Portable Devices
- DCDC Conversion
- Power Supplies
- Synchronous Rectification

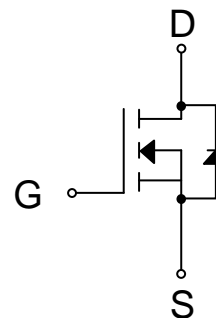
#### ➤ Ordering Information

Device	Package	Shipping
SSC8LA12GT4	TO-220-3L	50/Tube

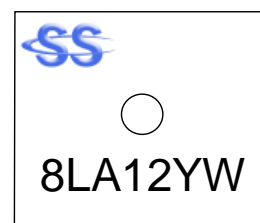
#### ➤ Pin Configuration



**TO-220-3L (Top View)**



**Pin Configuration**



**Marking**

(YW: Internal Traceability Code)



## ➤ Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$V_{DSS}$	Drain-to-Source Voltage	100	V
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current <sup>d</sup>	$T_C=25^\circ\text{C}$	150
		$T_C=100^\circ\text{C}$	69
$I_{DSM}$	Continuous Drain Current <sup>a</sup>	$T_A=25^\circ\text{C}$	26
		$T_A=70^\circ\text{C}$	19
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	450	A
$P_D$	Power Dissipation <sup>c</sup>	$T_C=25^\circ\text{C}$	96
		$T_C=100^\circ\text{C}$	38
$P_{DSM}$	Power Dissipation <sup>a</sup>	$T_A=25^\circ\text{C}$	4.2
		$T_A=70^\circ\text{C}$	2.7
$I_{AS}$	Avalanche Current <sup>b</sup> $L=0.5\text{mH}$ Single Pulse	45	A
$E_{AS}$	Avalanche Energy <sup>b</sup> $L=0.5\text{mH}$ Single Pulse	506	mJ
$T_J$	Operation junction temperature	-55~150	°C
$T_{STG}$	Storage temperature range	-55~150	

## ➤ Thermal Resistance Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	30	°C/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	1.0	

Note:

- The value of  $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> FR-4 board with 2oz.copper, in a still air environment with  $T_A=25^\circ\text{C}$ . The value in any given application depends on the user is specific board design. The power dissipation is based on the  $t \leq 10\text{s}$  thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation  $P_D$  is based on  $T_{J(MAX)}=150^\circ\text{C}$ , using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.
- The maximum current rating is package limited.

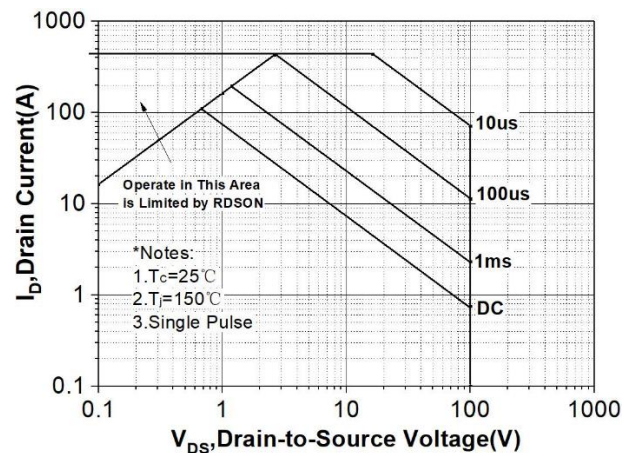
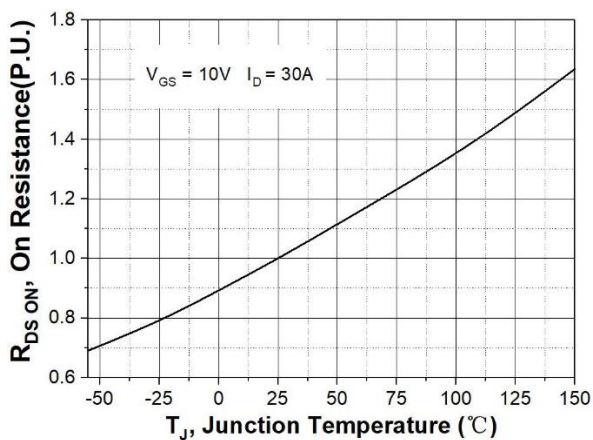
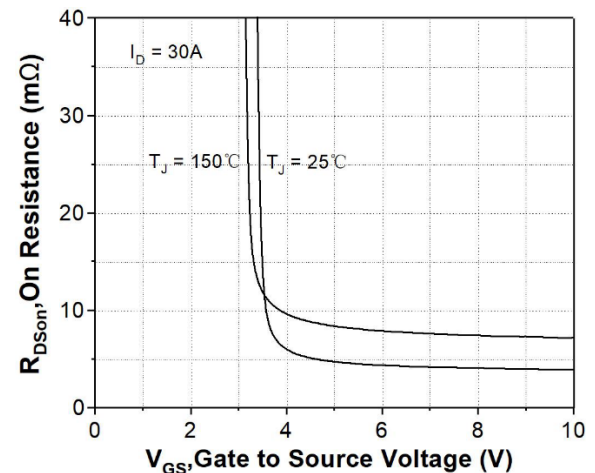
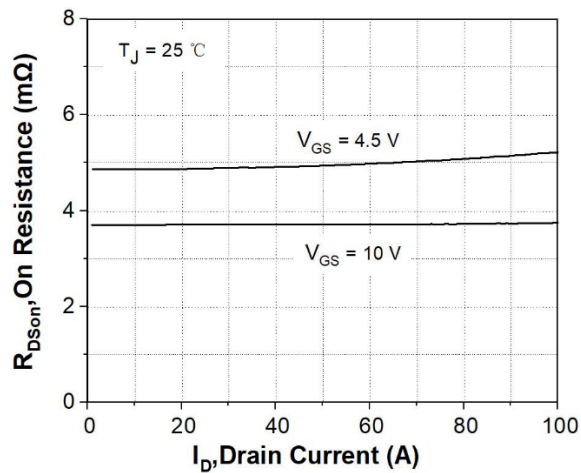
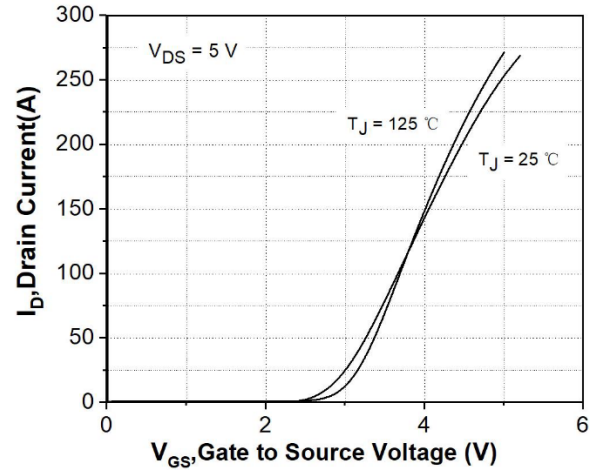
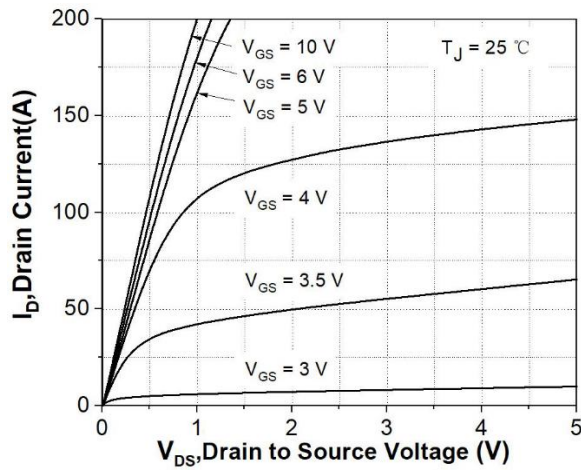


➤ **Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	100			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	1.4	2	2.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 30A		3.7	5	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 20A		4.9	7.5	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V			1	μA
Gate-Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Transconductance	G <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 20A		60		s
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = 20A		0.8	1.3	V
Gate Resistance	R <sub>G</sub>	V <sub>DS</sub> = 0V, f = 1MHz		2.7		Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 50V, V <sub>GS</sub> = 0V, f = 1MHz		4560		pF
Output Capacitance	C <sub>OSS</sub>			674		
Reverse Transfer Capacitance	C <sub>RSS</sub>			31		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, I <sub>D</sub> = 20A		64		nC
Gate to Source Charge	Q <sub>GS</sub>			15		
Gate to Drain Charge	Q <sub>GD</sub>			11		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 50V, R <sub>L</sub> = 2.5Ω, R <sub>G</sub> = 3Ω		22		ns
Rise Time	T <sub>r</sub>			27		
Turn-off Delay Time	T <sub>D(OFF)</sub>			66		
Fall Time	T <sub>f</sub>			73		
Diode Recovery Time	T <sub>rr</sub>	I <sub>F</sub> =20A, di/dt=100A/us		50		ns
Diode Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =20A, di/dt=100A/us		110		nC



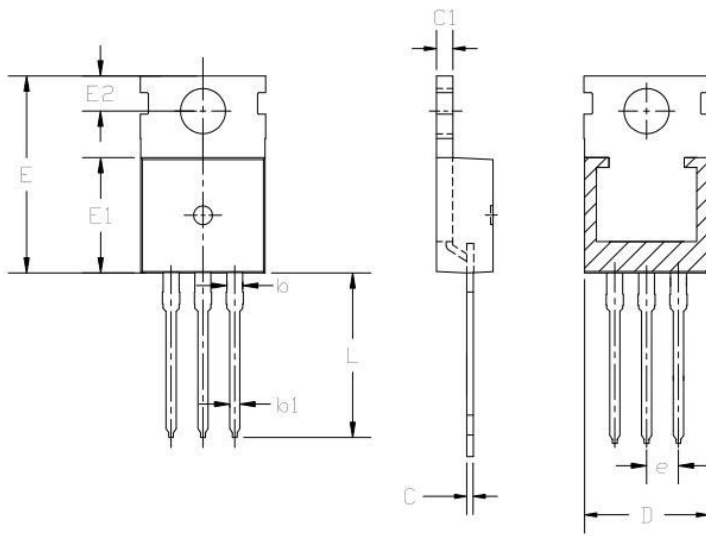
➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



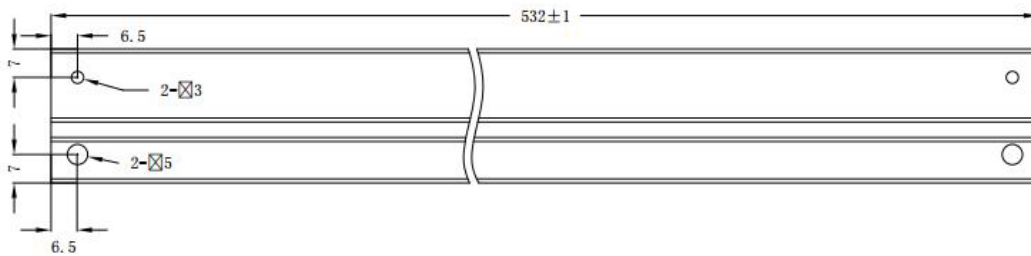
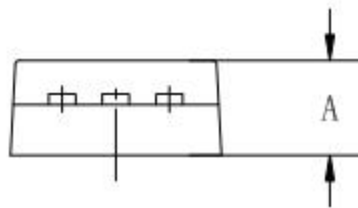


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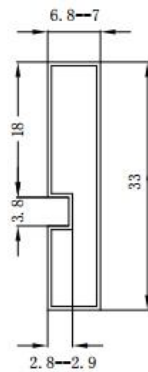
## Package Information



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.40	--	4.60
b	1.20	--	1.36
b1	0.70	--	0.90
C	0.48	--	0.53
C1	1.28	--	1.32
D	9.80	10.00	10.20
E	15.20	15.45	15.75
E1	9.00	9.20	9.40
E2	2.60	--	2.90
e	--	2.54	--
L	13.00	--	13.40



T=0.5 ±0.1



### 技术要求:

1. 材料: 透明PVC
2. 表面电阻:  $10E5 \sim 10E10$  OHMS/SQ
3. 未注尺寸公差 $\pm 0.3$
4. 黑色钉子由厂家出货时塞于左端



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