



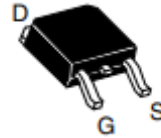
## SSC8028GT8

### N-Channel Enhanced MOSFET

#### ➤ Features

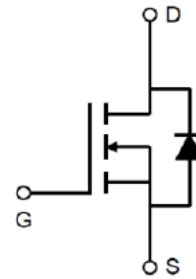
VDS	VGS	RDSON Typ.	ID
20V	±12V	3.1mR@4.5V	106A
		4.2mR@2.5V	

#### ➤ Pin Configuration



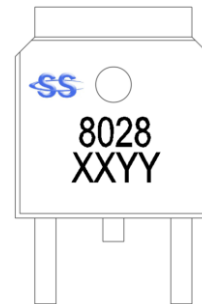
#### ➤ Description

This device is N-Channel enhancement MOSFET. Uses advanced trench 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+DVDS+Rg Test.



#### ➤ Applications

- DC/DC converters
- Power supplies
- Motor Drive Control
- Synchronous rectification



Marking

(XX: Product Year/YY: Product Week)

#### ➤ Ordering Information

Device	Package	Shipping
SSC8028GT8	TO-252	2500/Reel



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

Symbol	Parameter	Ratings	Unit	
$V_{DSS}$	Drain-to-Source Voltage	20	V	
$V_{GSS}$	Gate-to-Source Voltage	$\pm 12$	V	
$I_D$	Continuous Drain Current <sup>d</sup>	$T_C=25^{\circ}\text{C}$	106	A
		$T_C=100^{\circ}\text{C}$	52	
$I_{DSM}$	Continuous Drain Current <sup>a</sup>	$T_A=25^{\circ}\text{C}$	40	A
		$T_A=70^{\circ}\text{C}$	26	
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	424	A	
$P_D$	Power Dissipation <sup>c</sup>	$T_C=25^{\circ}\text{C}$	62	W
		$T_C=100^{\circ}\text{C}$	25	
$P_{DSM}$	Power Dissipation <sup>a</sup>	$T_A=25^{\circ}\text{C}$	8.9	W
		$T_A=70^{\circ}\text{C}$	5.7	
$I_{AS}$	Avalanche Current <sup>b</sup> L=0.5mH Single Pulse	29	A	
$E_{AS}$	Avalanche Energy <sup>b</sup> L=0.5mH Single Pulse	210	mJ	
$T_J$	Operation junction temperature	-55~150	$^{\circ}\text{C}$	
$T_{STG}$	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>	14	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance	2	

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  $T_{J(\text{MAX})}=150^{\circ}\text{C}$ , 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.

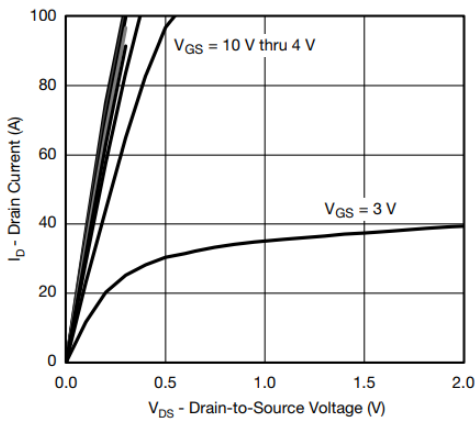


➤ **Electronics Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

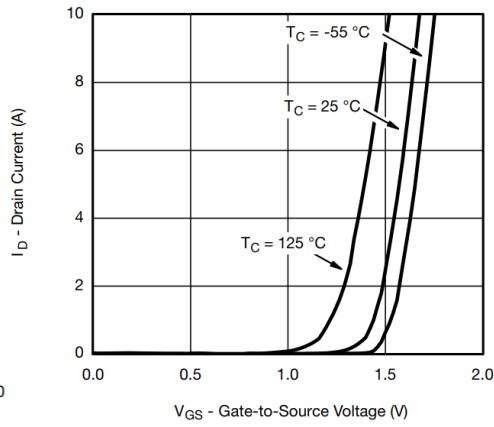
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.7	1	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=20A$		3.1	5	mR
		$V_{GS}=2.5V, I_D=15A$		4.2	7	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$			1	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 12V, V_{DS}=0V$			$\pm 100$	nA
$G_{FS}$	Transconductance	$V_{DS}=5V, I_D=5A$		25		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=10A$		0.78	1.3	V
$R_g$	Gate Resistance	$V_{GS}=0V, f=1MHz$		2	3	R
$C_{iss}$	Input Capacitance	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		2040		pF
$C_{oss}$	Output Capacitance			470		
$C_{rss}$	Reverse Transfer Capacitance			110		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=4.5V, R_L=1R$ $V_{DS}=10V, R_G=1R$		7.5		ns
$T_r$	Rise time			6		
$T_{D(OFF)}$	Turn-off delay time			32		
$T_f$	Fall time			7		
$Q_G$	Total Gate Charge	$V_{GS}=4.5V, V_{DS}=10V$ $I_D=20A$		17		nC
$Q_{GS}$	Gate Source Charge			6		
$Q_{GD}$	Gate Drain Charge			8		
$T_{rr}$	Diode Recovery Time	$I_F=20A, di/dt=100A/\mu s$		20		ns
$Q_{rr}$	Diode Recovery Charge	$I_F=20A, di/dt=100A/\mu s$		30		nC



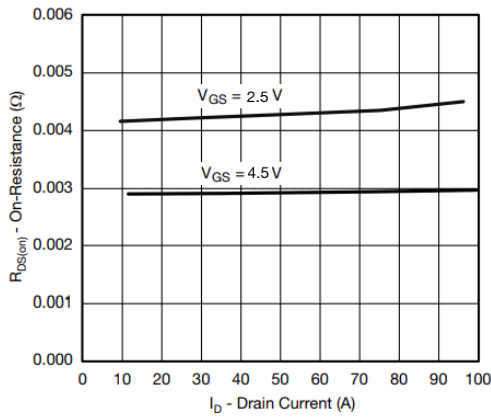
➤ **Typical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)



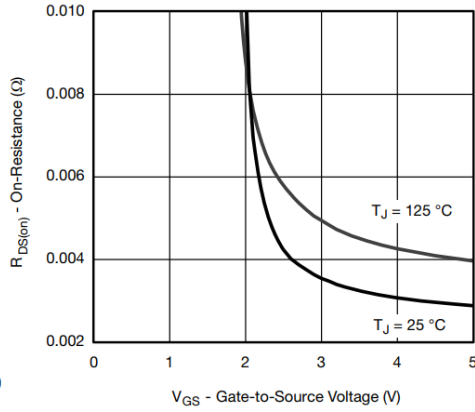
**Output Characteristics**



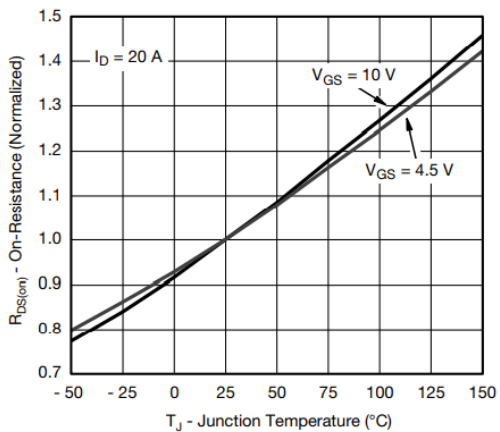
**Transfer Characteristics**



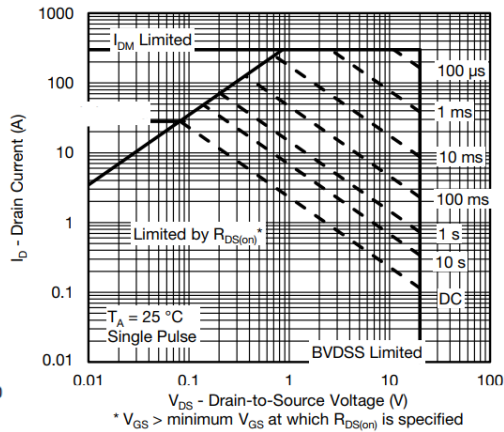
**On-Resistance vs. Drain Current**



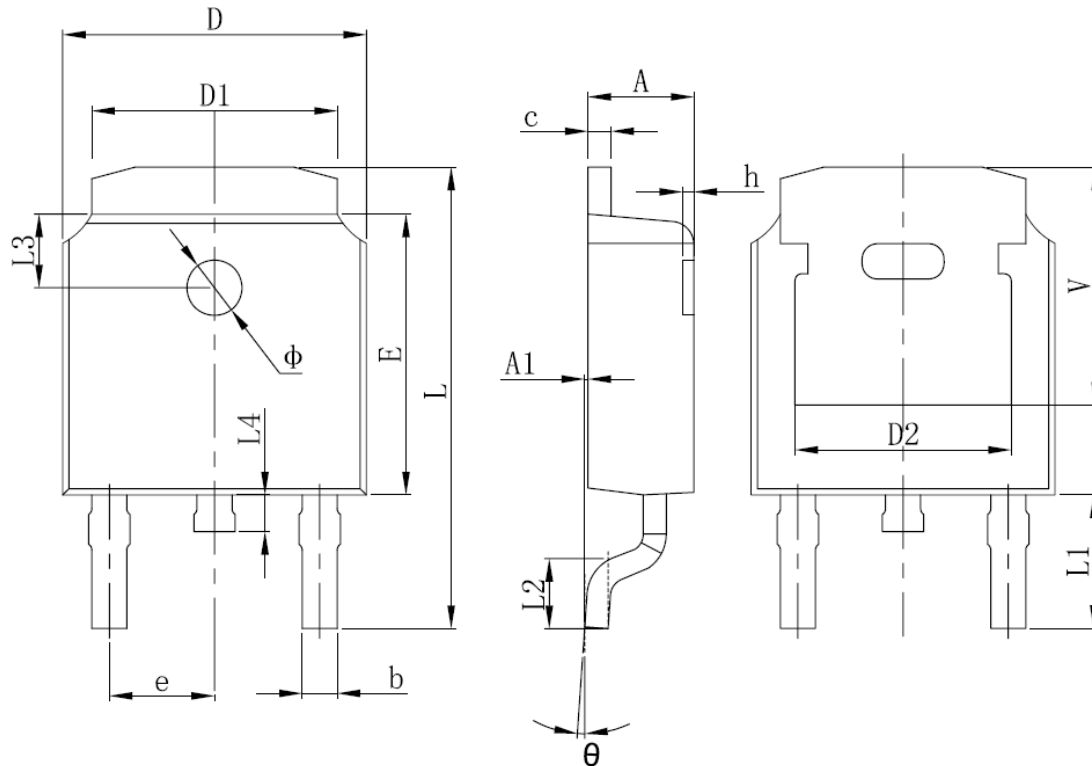
**On-Resistance vs. Gate-to-Source Voltage**



**On-Resistance vs. Junction Temperature**



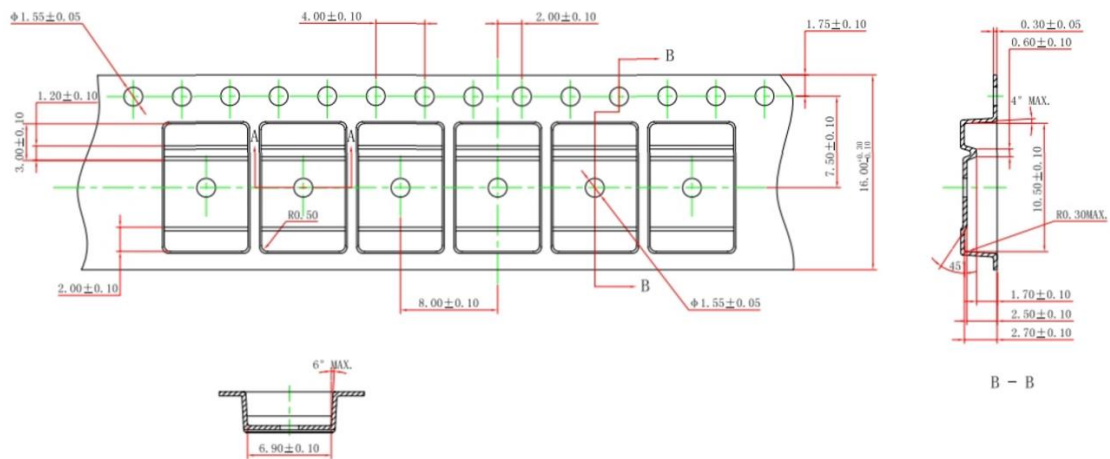
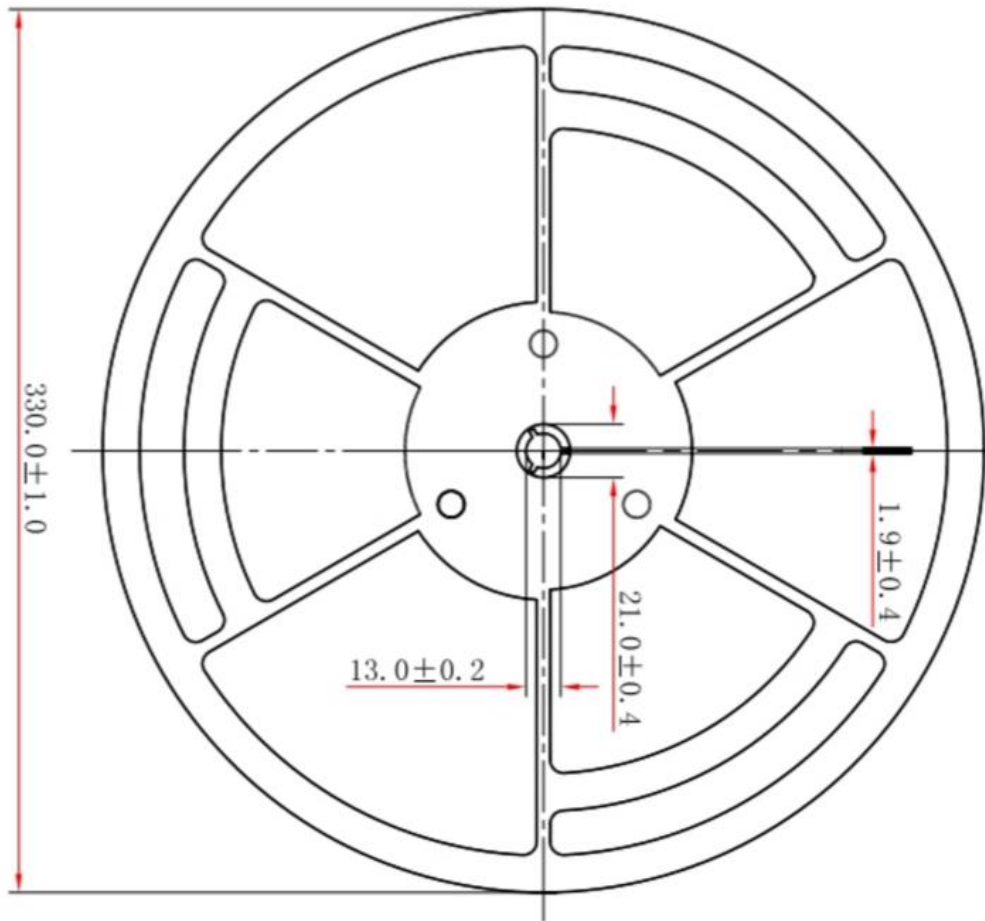
**Safe Operating Area**

**➤ Package Information**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	



➤ Tape and Reel





➤ **History Version**

V1.0	Product datasheet release	2020-11-06
V1.1	Update SOA and Ron vs. $V_{GS}$ Curve	2021-03-24

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