

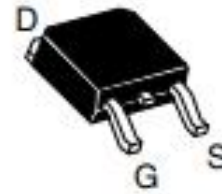


P-Channel Enhanced MOSFET

➤ **Features**

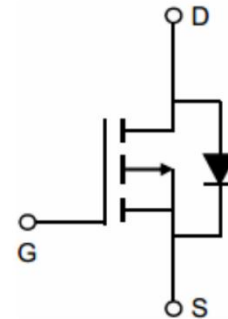
VDS	VGS	RDS(on) Typ.	ID
-30V	±20V	5.2mR@-10V	-95A
		7mR@-4.5V	

➤ **Pin Configuration**



➤ **Description**

This device is P-Channel enhancement MOSFET. Uses advanced trench technology and design to provide excellent RDS(on) with low gate charge. This device is suitable for use in DC-DC conversion, power switch and charging circuit.

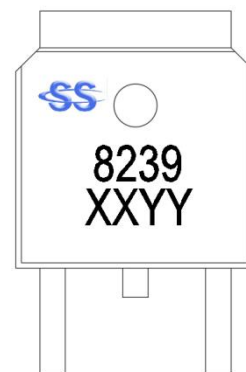


➤ **Applications**

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

➤ **Ordering Information**

Device	Package	Shipping
SSC8239GT8	TO-252	2500/Reel



Marking

(XX: Product Year/YY: Product Week)

➤ **Absolute Maximum Ratings**(T_A=25°C unless otherwise noted)



Symbol	Parameter	Ratings	Unit	
V _{DSS}	Drain-to-Source Voltage	-30	V	
V _{GSS}	Gate-to-Source Voltage	±20	V	
I _D	Continuous Drain Current ^d	T _C =25°C	95	A
		T _C =100°C	55	
I _{DSM}	Continuous Drain Current ^a	T _A =25°C	30	A
		T _A =70°C	22	
I _{DM}	Pulsed Drain Current ^b	380	A	
P _D	Power Dissipation ^c	T _C =25°C	83	W
		T _C =100°C	33	
P _{DSM}	Power Dissipation ^a	T _A =25°C	7.8	W
		T _A =70°C	5	
I _{AS}	Avalanche Current ^b L=0.5mH Single Pulse	30	A	
E _{AS}	Avalanche Energy ^b L=0.5mH Single Pulse	225	mJ	
T _J	Operation junction temperature	-55~150	°C	
T _{STG}	Storage temperature range	-55~150		

➤ **Thermal Resistance Ratings**(T_A=25°C unless otherwise noted)

Symbol	Parameter	Ratings	Unit
R _{θJA}	Junction-to-Ambient Thermal Resistance ^a	16	°C/W
R _{θJC}	Junction-to-Case Thermal Resistance	1.5	

Note:

- The value of R_{θJA} is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with T_A=25°C. The value in any given application depends on the user is specific board design. The power dissipation is based on the t ≤ 10s thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation P_D is based on T_{J(MAX)}=150°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.

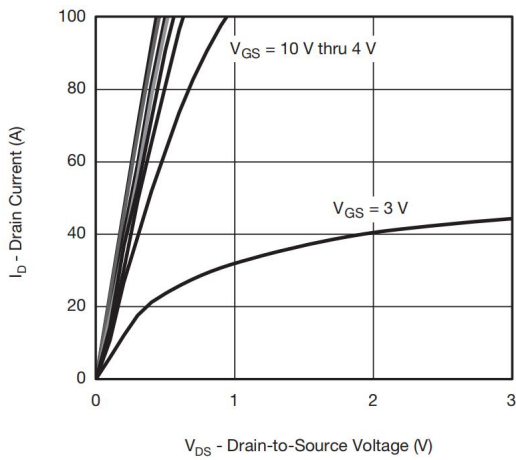
➤ **Electronics Characteristics**(T_A=25°C unless otherwise noted)



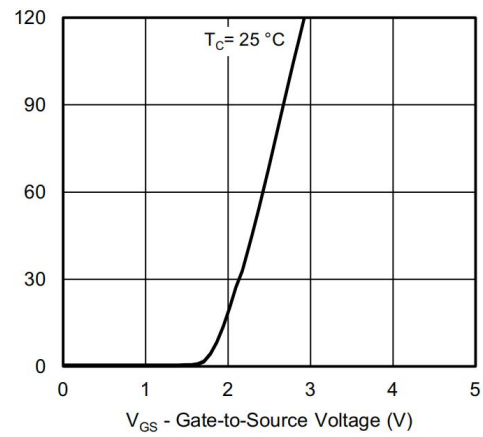
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.3	-2	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-20A$		5.2	6.8	mR
		$V_{GS}=-4.5V, I_D=-10A$		7	10	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
G_{FS}	Transconductance	$V_{DS}=-5V, I_D=-20A$		35		S
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=-10A$		-0.78	-1.3	V
R_g	Gate Resistance	$V_{GS}=0V, f=1MHz$		3.8		R
C_{iss}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		4800		pF
C_{oss}	Output Capacitance			514		
C_{rss}	Reverse Capacitance			410		
$T_{D(ON)}$	Turn-on delay time	$V_{GS}=-10V, R_L=0.75R$ $V_{DS}=-15V, R_G=3R$		15		ns
T_r	Rise time			26		
$T_{D(OFF)}$	Turn-off delay time			67		
T_f	Fall time			25		
Q_G	Total Gate Charge	$V_{GS}=-10V, V_{DS}=-15V$ $I_D=-20A$		71		nC
Q_{GS}	Gate Source Charge			12		
Q_{GD}	Gate Drain Charge			15		
T_{rr}	Diode Recovery Time	$I_F=-20A, di/dt=500A/\mu s$		33		ns
Q_{rr}	Diode Recovery Charge	$I_F=-20A, di/dt=500A/\mu s$		66		nC



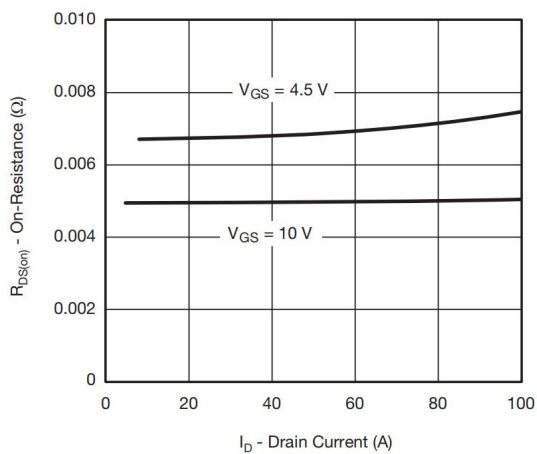
➤ **Typical Characteristics** ($T_A=25^\circ\text{C}$ unless otherwise noted)



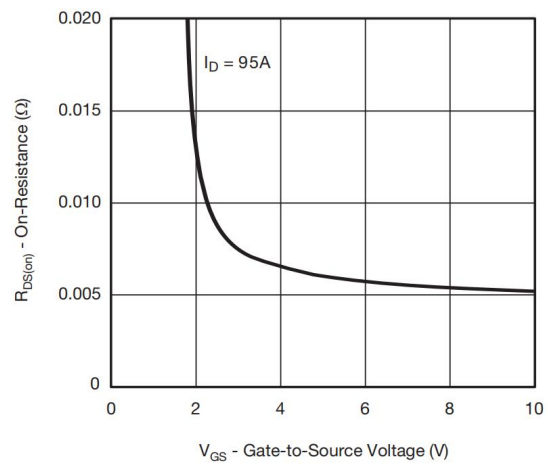
Output Characteristics



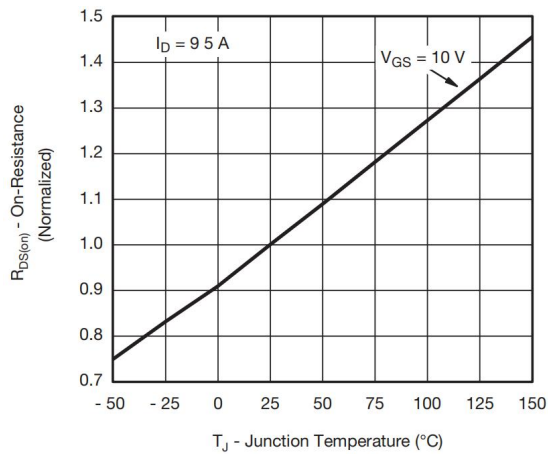
Transfer Characteristics



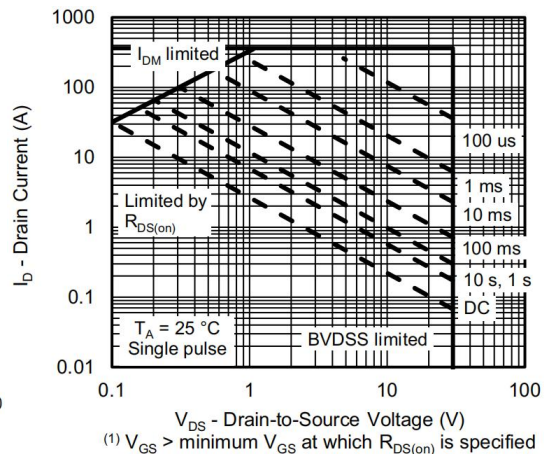
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

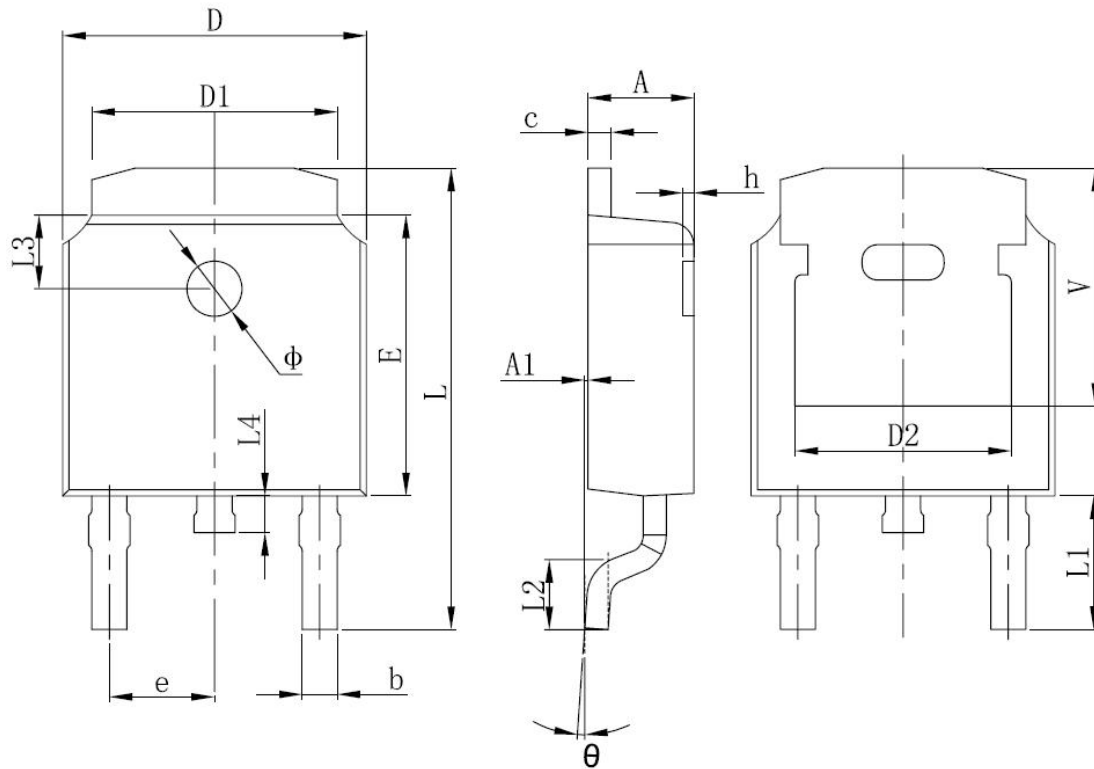


Safe Operating Area, Junction-to-Ambient

(1) $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified



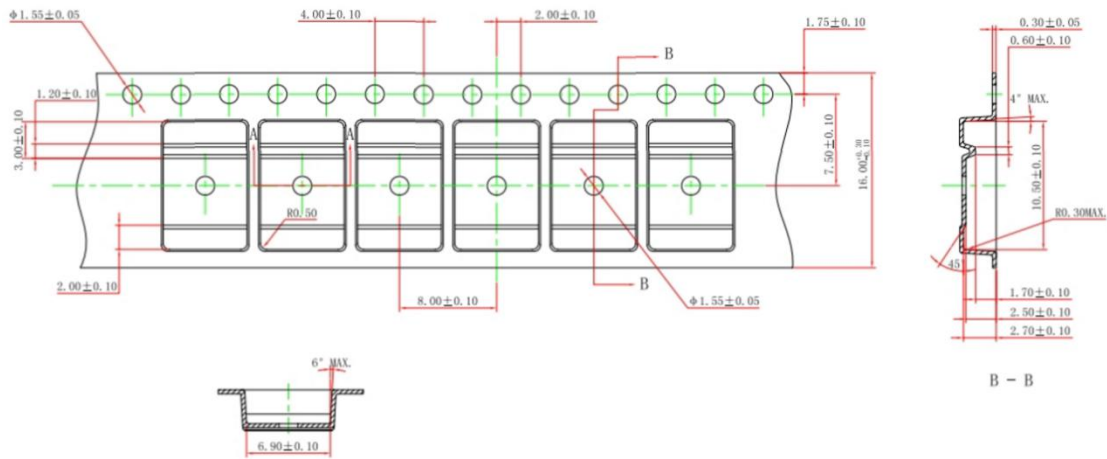
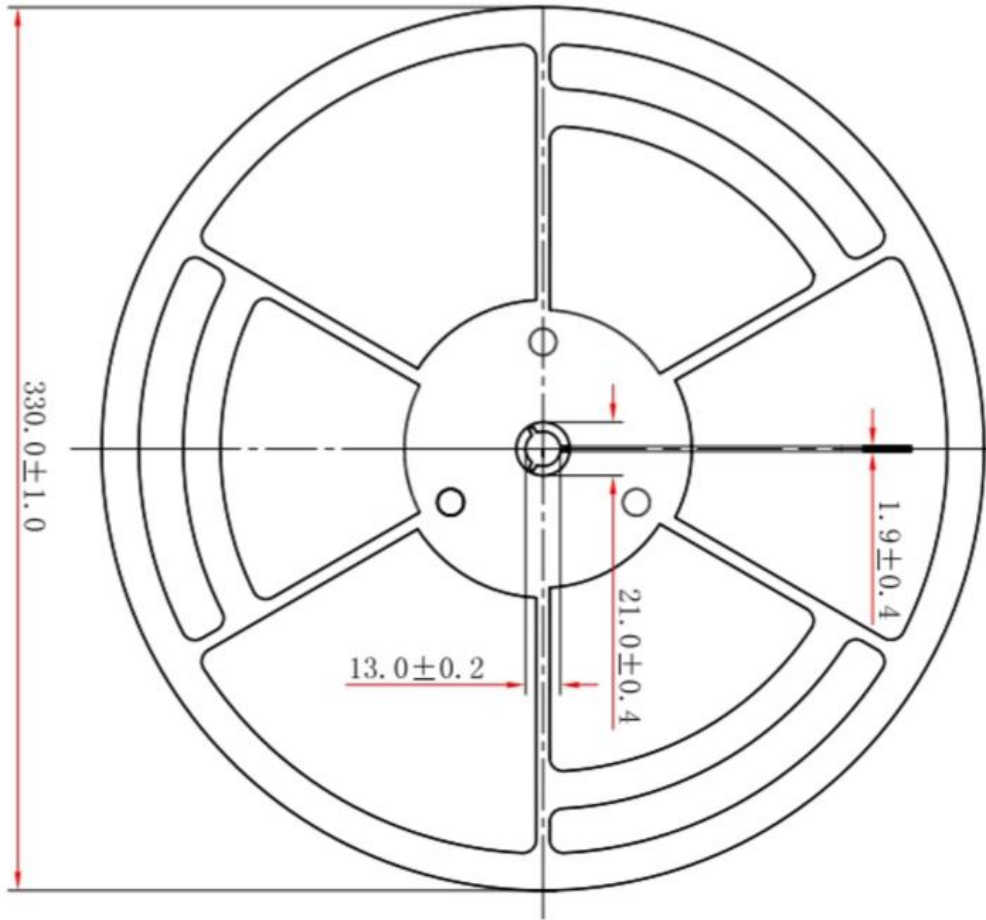
➤ Package Information



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
phi	1.100	1.300	0.043	0.051
theta	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	



➤ Tape and Reel





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