

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

FEATURES

- Low $R_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

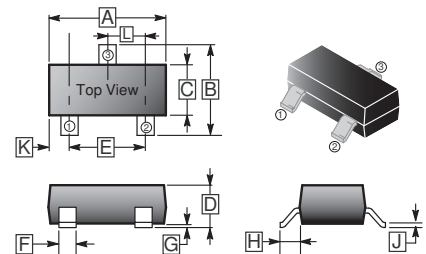
APPLICATIONS

- PoE Power Sourcing Equipment
- PoE Powered Devices
- Telecom DC/DC converters
- White LED boost converters

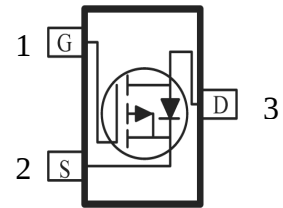
PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

SC-59



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10	REF.
B	2.25	3.00	H	0.40	REF.
C	1.30	1.70	J	0.10	0.20
D	1.00	1.40	K	0.45	0.55
E	1.70	2.30	L	0.85	1.15
F	0.35	0.50			



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	$T_A=25^\circ\text{C}$	A
		$T_A=70^\circ\text{C}$	
Pulsed Drain Current ²	I_{DM}	5	A
Power Dissipation ¹	P_D	$T_A=25^\circ\text{C}$	W
		$T_A=70^\circ\text{C}$	
Continuous Source Current (Diode Conduction) ¹	I_S	1.5	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance Rating			
Maximum Junction to Ambient ¹	$R_{\theta JA}$	$t \leq 10\text{sec}$	$^\circ\text{C} / \text{W}$
		Steady State	

Notes:

1. Surface mounted on 1"x1" FR4 board.
2. Pulse width limited by Max. junction temperature.

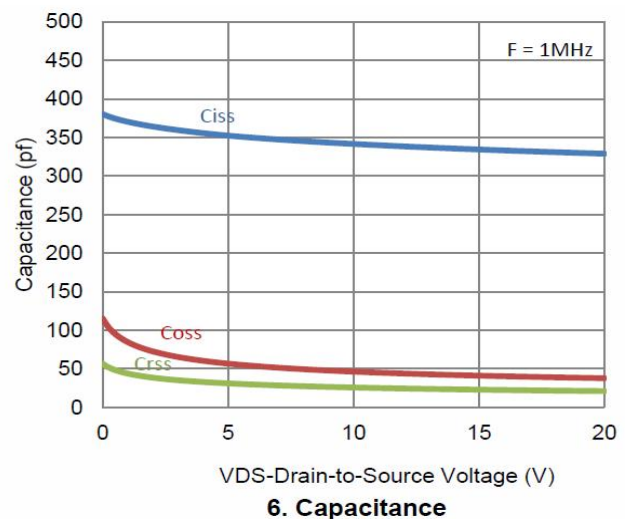
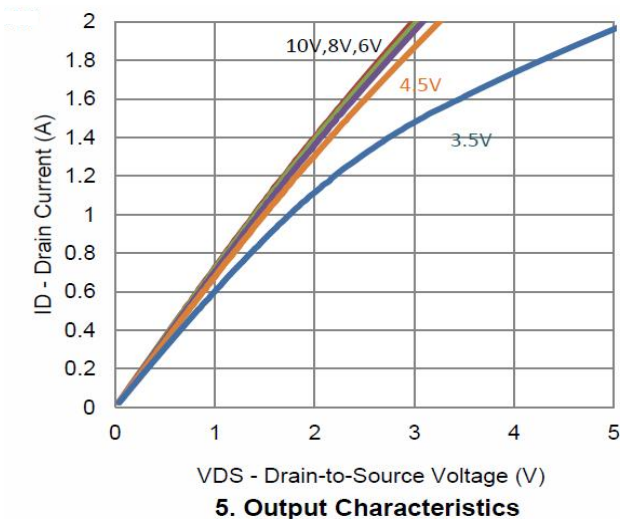
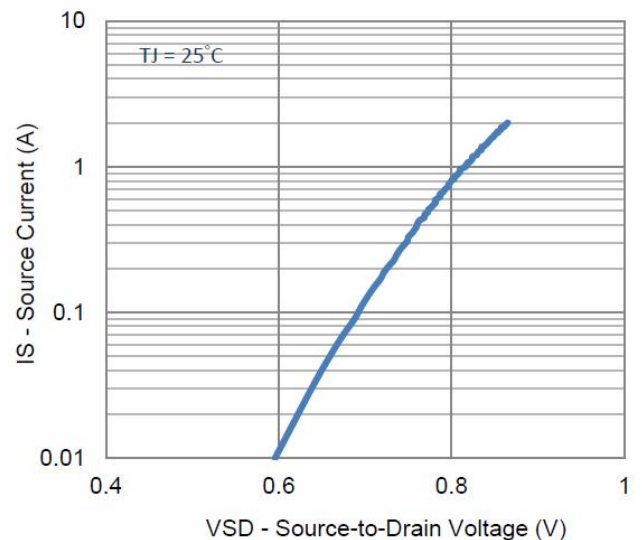
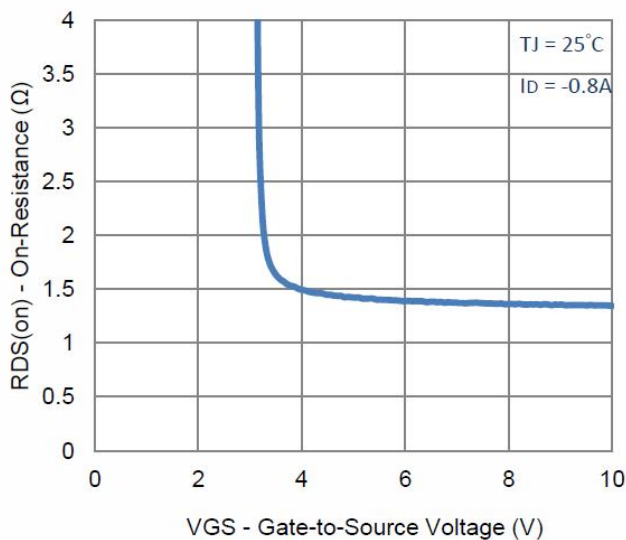
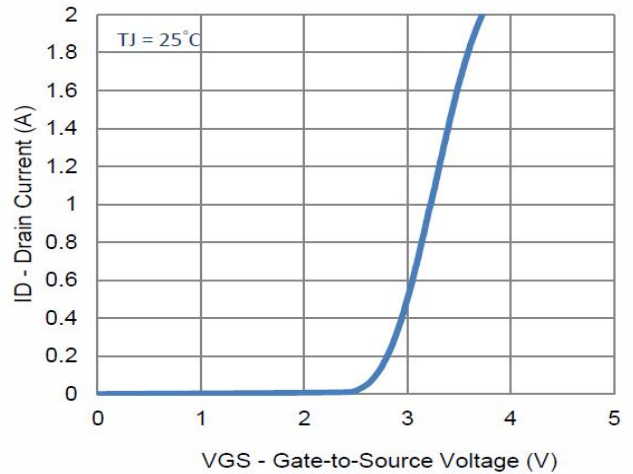
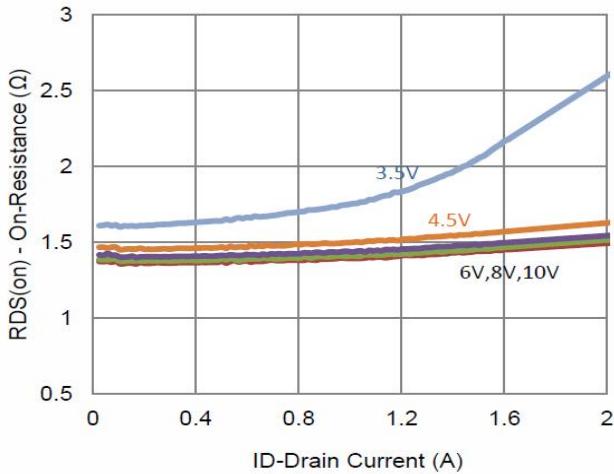
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static						
On-State Drain Current	$I_{D(on)}$	-0.5	-	-	A	$V_{DS} = -5V, V_{GS} = -10V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-1	-	-	V	$V_{DS}=V_{GS}, I_D = -250\mu A$
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0, V_{GS} = \pm 20V$
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	$V_{DS} = -120V, V_{GS}=0$
		-	-	-10		$V_{DS} = -120V, V_{GS}=0, T_J=55^\circ\text{C}$
Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	1.2	Ω	$V_{GS} = -10V, I_D = -0.8A$
		-	-	1.3		$V_{GS} = -4.5V, I_D = -0.7A$
Forward Transconductance	g_{fs}	-	2.2	-	S	$V_{DS} = -15V, I_D = -0.5A$
Diode Forward Voltage	V_{SD}	-	-0.8	-	V	$I_S = -0.75A, V_{GS}=0$
Dynamic						
Total Gate Charge	Q_g	-	3.4	-	nC	$V_{DS} = -75V,$ $V_{GS} = -4.5V,$ $I_D = -0.8A$
Gate-Source Charge	Q_{gs}	-	1.3	-		
Gate-Drain Charge	Q_{gd}	-	1.6	-		
Turn-on Delay Time	$T_{d(on)}$	-	3	-	nS	$V_{DD} = -75V,$ $V_{GEN} = -10V,$ $R_{GEN}=6\Omega,$ $R_L=93.8\Omega,$ $I_D = -0.8A$
Rise Time	T_r	-	10	-		
Turn-off Delay Time	$T_{d(off)}$	-	15	-		
Fall Time	T_f	-	11	-		
Input Capacitance	C_{iss}	-	334	-	pF	$V_{DS} = -15V,$ $V_{GS}=0,$ $f=1.0\text{MHz}$
Output Capacitance	C_{oss}	-	41	-		
Reverse Transfer Capacitance	C_{rss}	-	23	-		

Notes:

1. Pulse test : $PW \leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

CHARACTERISTIC CURVES



CHARACTERISTIC CURVES

