

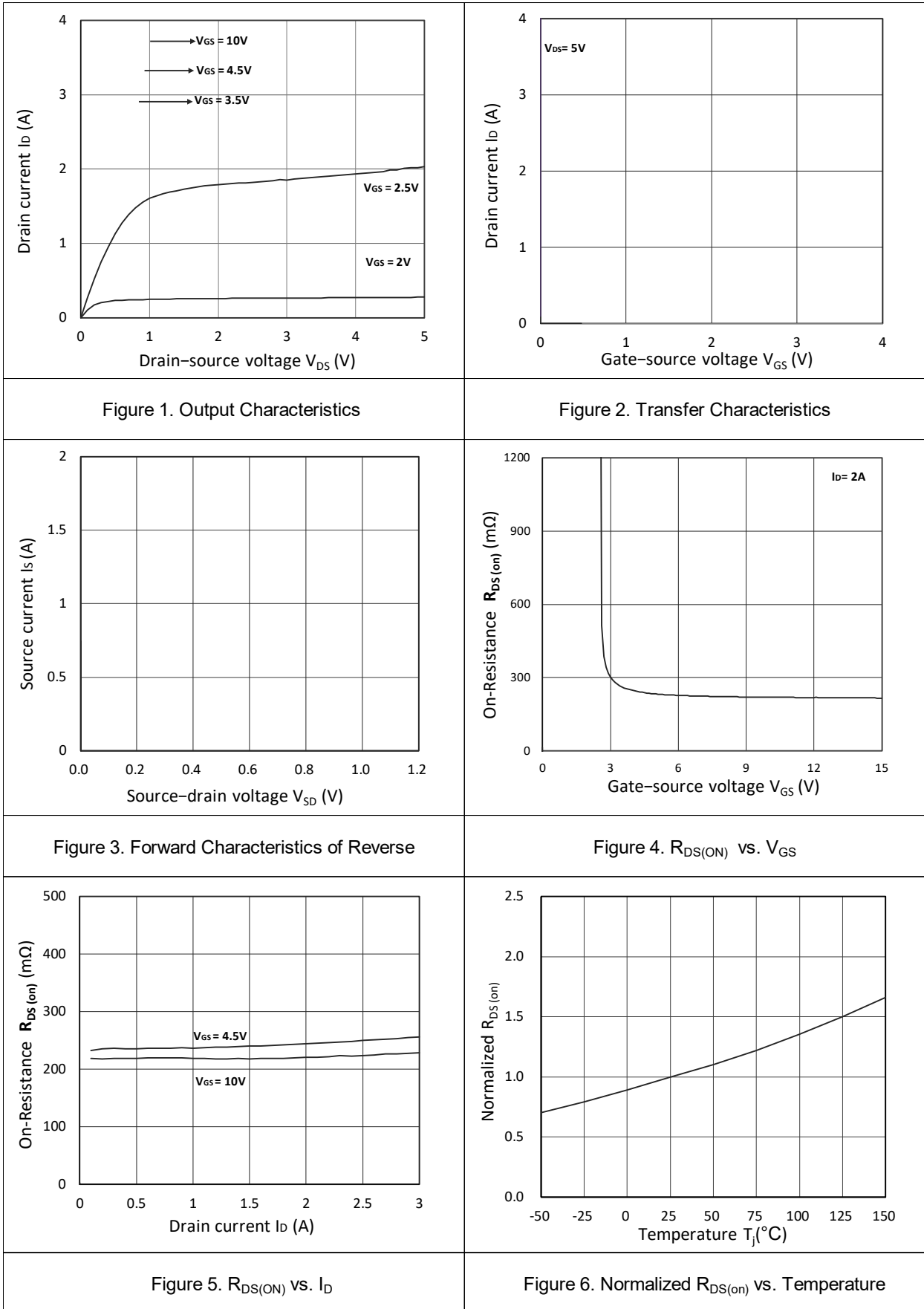
Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	100	110	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 100V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
On Characteristics ^{note3}						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	2.0	3.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance ^{note2}	$V_{GS} = 10V, I_D = 3A$	-	100	120	m Ω
Dynamic Characteristics ^{note4}						
C_{iss}	Input Capacitance	$V_{DS} = 50V, V_{GS} = 0V,$ $f = 1.0MHz$	-	206	-	pF
C_{oss}	Output Capacitance		-	28.9	-	pF
C_{riss}	Reverse Transfer Capacitance		-	1.4	-	pF
Q_g	Total Gate Charge	$V_{DS} = 50V, I_D = 3A,$ $V_{GS} = 10V$	-	4.3	-	nC
Q_{gs}	Gate-Source Charge		-	1.5	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	1.1	-	nC
Switching Characteristics ^{note4}						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 50V, I_{DS}=3A$ $R_G = 2\Omega, V_{GEN} = 10V$	-	14.7	-	ns
t_r	Turn-On Rise Time		-	3.5	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	20.9	-	ns
t_f	Turn-Off Fall Time		-	2.7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current ^{note2}		-	-	8.0	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	12	A
V_{SD}	Drain to Source Diode Forward Voltage ^{note3}	$V_{GS} = 0V, I_S = 3A$	-	-	1.3	V
t_{rr}	Body Diode Reverse Recovery Time	$V_{GS} = 0V, I_F = 3A,$ $di/dt = 100A/\mu s$	-	32.1	-	ns
Q_{rr}	Body Diode Reverse Recovery Time Charge		-	39.4	-	nC
I_{rrm}	Peak Reverse Recovery Current		-	2.1	-	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. $V_{DD}=50$ V, $R_G=50$ Ω , $L=0.3$ mH, starting $T_j=25$ $^\circ\text{C}$

Typical Characteristics



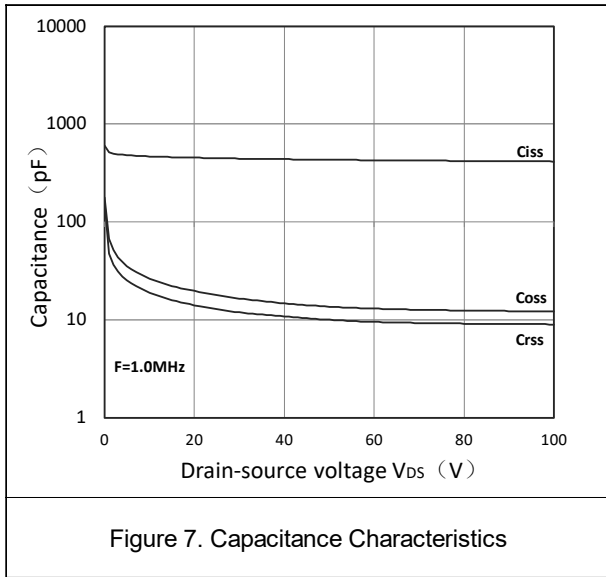


Figure 7. Capacitance Characteristics

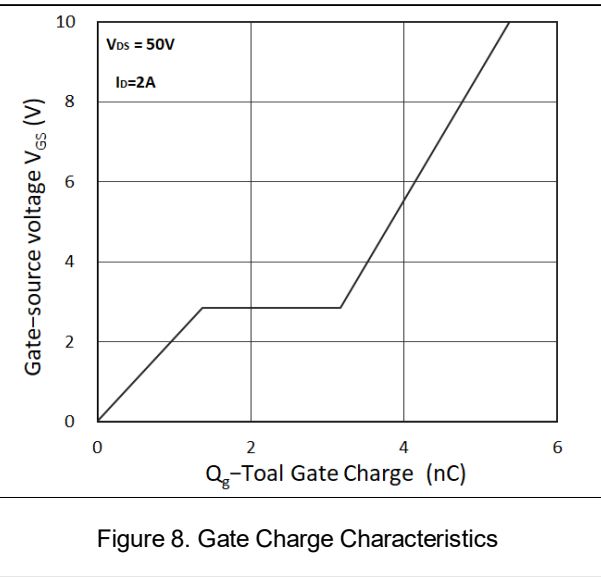
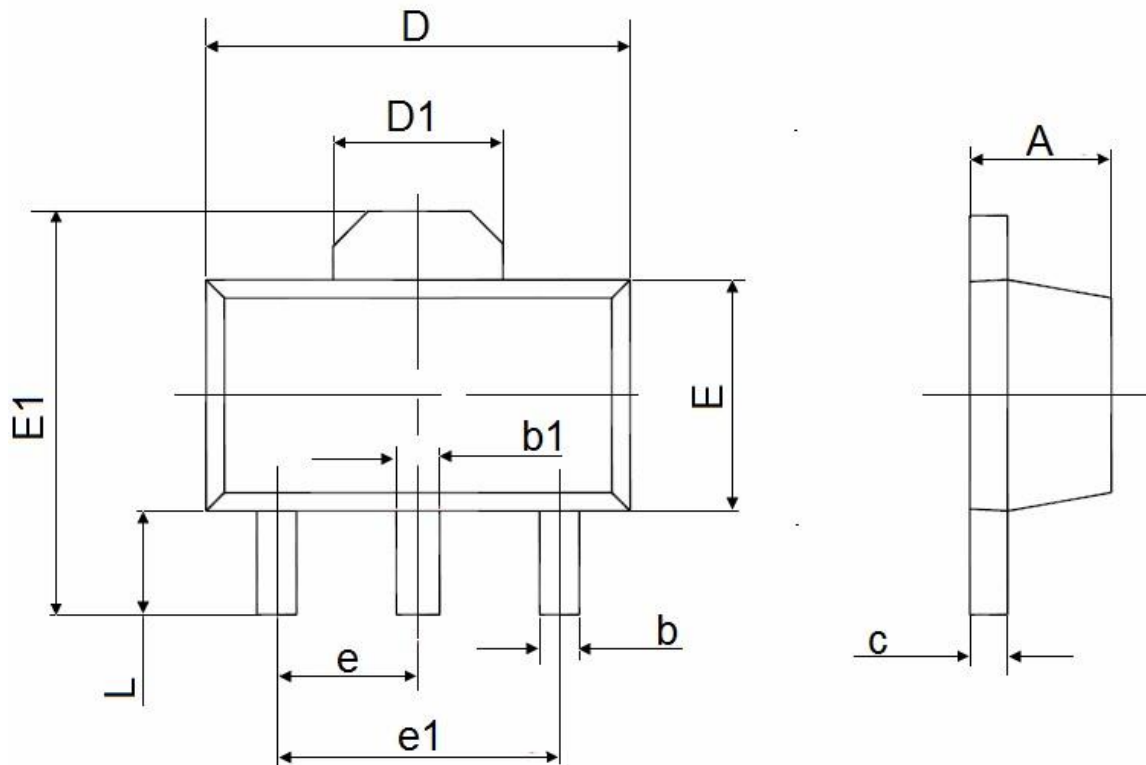


Figure 8. Gate Charge Characteristics

Package Mechanical Data:SOT-89-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047