

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	V
Drain Current	I _D	1.1 4.0	A
		Continuous Pulsed	

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Total Power Dissipation	P _D	500	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	250	K/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	—	—	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1.0 10	μA	@ T _J = 25°C @ T _J = 125°C V _{DS} = 24V, V _{GS} = 0V
Gate-Body Leakage	I _{GSS}	—	—	± 100	nA	V _{GS} = ± 12V, V _{DS} = 0V
ON CHARACTERISTICS (Note 4)						
Gate Threshold Voltage	V _{GS(th)}	1.0	—	3.0	V	V _{DS} = 10V, I _D = 1.0mA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	—	0.170 0.150	Ω	V _{GS} = 4.5V, I _D = 0.5A V _{GS} = 10V, I _D = 1.0A
Forward Transconductance	g _{FS}	1.3	2.4	—	S	V _{DS} = 10V, I _D = 0.5A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iSS}	—	150	—	pF	V _{DS} = 10V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oSS}	—	90	—	pF	
Reverse Transfer Capacitance	C _{rSS}	—	30	—	pF	
Total Gate Charge	Q _g	—	5.5	—	nC	V _{DS} = 24V, I _D = 1.0A, V _{GS} = 10V
Gate-to-Source Charge	Q _{gs}	—	0.8	—	nC	
Gate-to-Drain Charge	Q _{gd}	—	1.3	—	nC	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t _{D(ON)}	—	10	—	ns	V _{DD} = 10V, I _D = 0.5A, V _{GS} = 5.0V, R _{GEN} = 50Ω
Turn-Off Delay Time	t _{D(OFF)}	—	25	—	ns	
Turn-On Rise Time	t _r	—	15	—	ns	
Turn-Off Fall Time	t _f	—	45	—	ns	
SOURCE-DRAIN RATINGS (BODY DIODE)						
Continuous Source Current	I _S	—	—	0.54	A	—
Pulse Source Current	I _{SM}	—	—	4.0	A	—
Forward Voltage	V _{SD}	—	—	1.2	V	I _F = 1.0A, V _{GS} = 0V
Reverse Recovery Time	t _{rr}	—	35	—	ns	I _F = 1.0A, di/dt = 50A/μs

Notes: 4. Pulse width ≤ 300μs, duty cycle ≤ 2%.

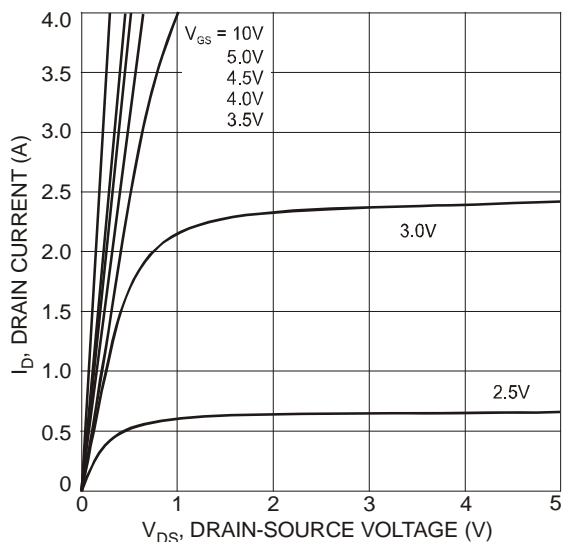


Fig. 1 On-Region Characteristics

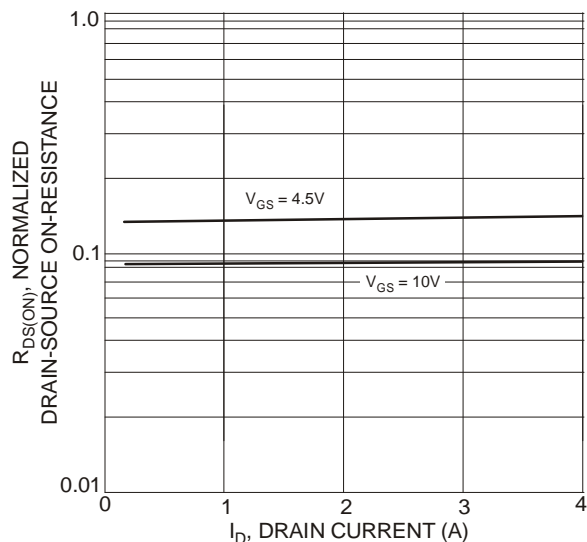


Fig. 2 On-Resistance vs. Drain Current

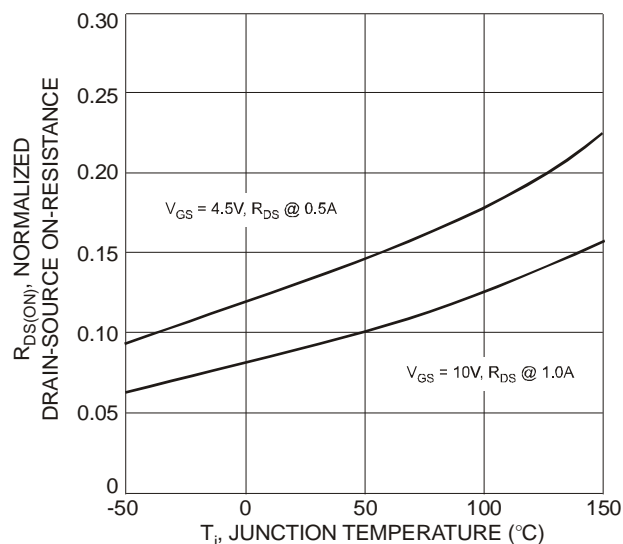


Fig. 3 On-Resistance vs. Junction Temperature

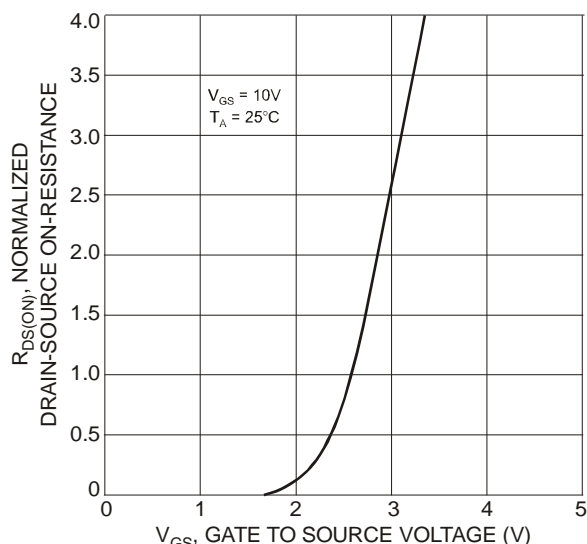
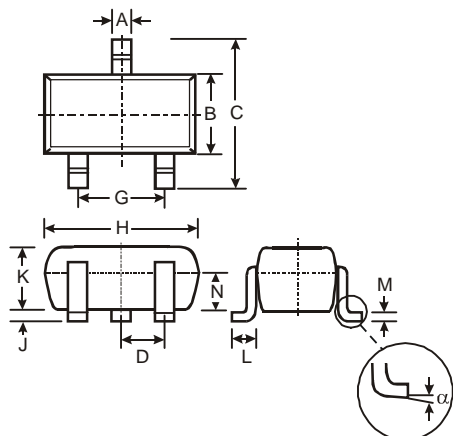


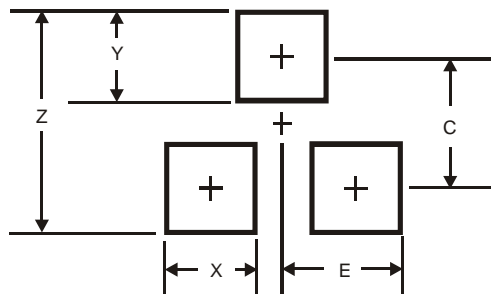
Fig. 4 On-Resistance vs. Gate-Source Voltage

Package Outline Dimensions



SC59			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	-	-	0.95
G	-	-	1.90
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.4
X	0.8
Y	1.0
C	2.4
E	1.35

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