

**Features**

$V_{(BR)DSS}$	$R_{DS(ON)}$ max	$I_D$ max $T_A = +25^\circ C$
-20V	150m $\Omega$ @ $V_{GS} = -4.5V$	-1.9A
	200m $\Omega$ @ $V_{GS} = -2.5V$	-1.7A

**Application**

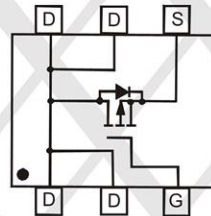
- Notebook
- Load Switch
- Networking
- Hand-held Instruments

**Package and Pin Configuration**

SOT-563

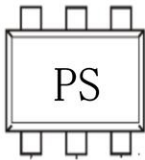


Top View



Top View  
Internal Schematic

**Marking:**



**Maximum Ratings** (@ $T_A = +25^\circ C$  unless otherwise specified.)

Characteristic			Symbol	Value	Units
Drain-Source Voltage			$V_{DSS}$	-20	V
Gate-Source Voltage			$V_{GSS}$	$\pm 12$	V
Continuous Drain Current (Note 5) $V_{GS} = -4.5V$	Steady State	$T_A = +25^\circ C$ $T_A = +70^\circ C$	$I_D$	-1.9 -1.5	A
Continuous Drain Current (Note 5) $V_{GS} = -4.5V$	$t \leq 5s$	$T_A = +25^\circ C$ $T_A = +70^\circ C$	$I_D$	-2.1 -1.65	A
Continuous Drain Current (Note 5) $V_{GS} = -2.5V$	Steady State	$T_A = +25^\circ C$ $T_A = +70^\circ C$	$I_D$	-1.7 -1.3	A
Pulsed Drain Current	$t_p = 10\mu s$		$I_{DM}$	-4.0	A

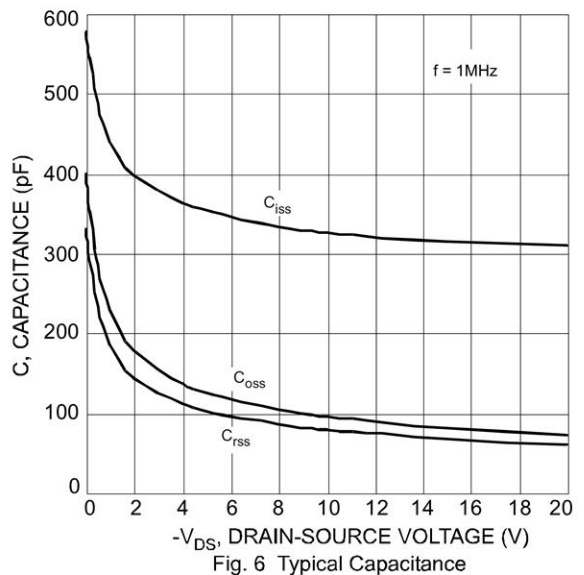
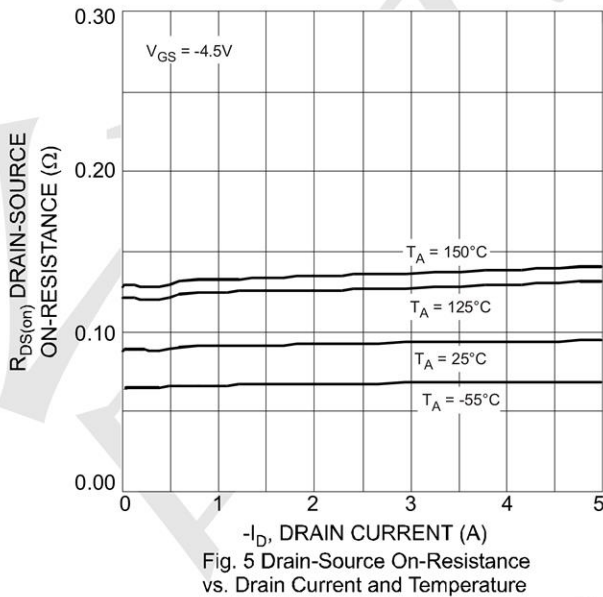
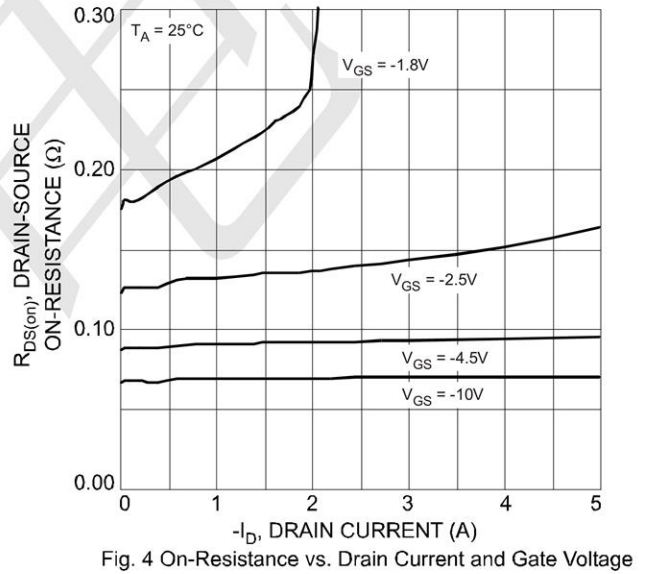
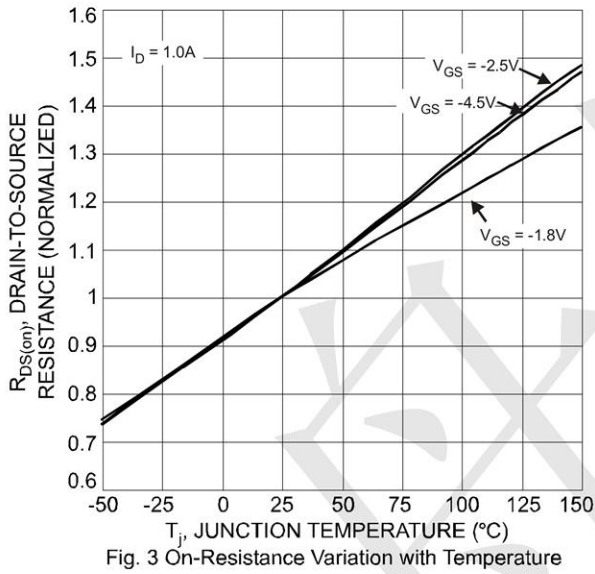
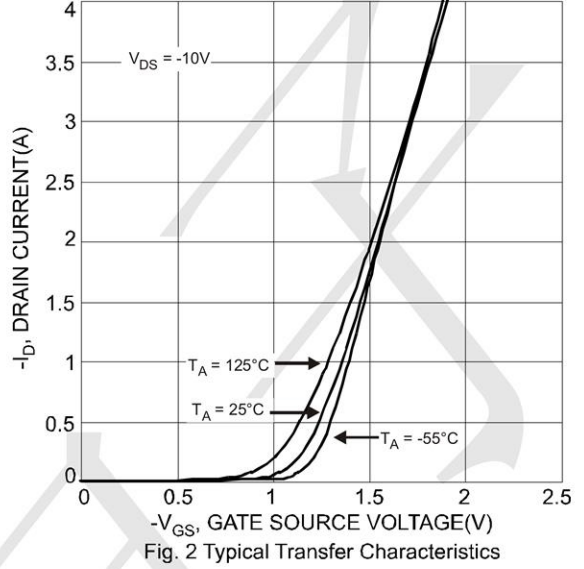
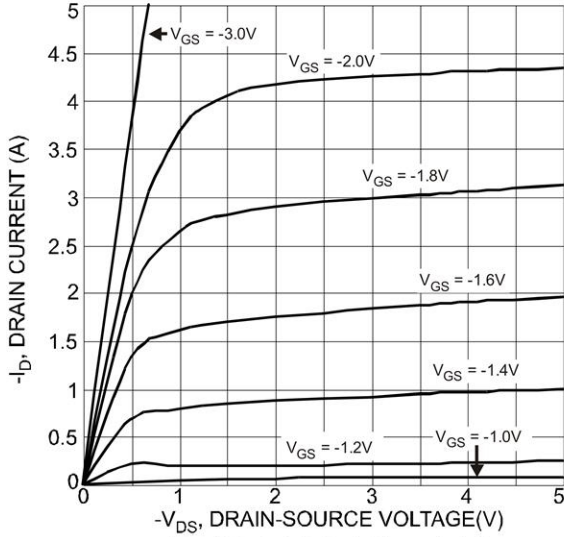
**Thermal Characteristics**

Characteristic	Symbol	Value	Units
Power Dissipation (Note 5)	$P_D$	0.85	W
Thermal Resistance, Junction to Ambient @ $T_A = +25^\circ C$ (Note 5)	$R_{\theta JA}$	146	$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

**Electrical Characteristics** (@T<sub>A</sub> = +25°C unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 6)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	-20	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	—	—	-1.0 -5.0	μA	T <sub>J</sub> = +25°C T <sub>J</sub> = +125°C V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±100	nA	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 6)</b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	-0.45	—	-1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	—	92	150	mΩ	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -950mA
			134	200		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -670mA
			180	240		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -200mA
Forward Transconductance	g <sub>FS</sub>	—	3.1	—	S	V <sub>DS</sub> = -10V, I <sub>D</sub> = -810mA
Diode Forward Voltage (Note 6)	V <sub>SD</sub>	—	—	-0.9	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = -360mA
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	C <sub>iss</sub>	—	320	—	pF	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0V f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	80	—	pF	
Reverse Transfer Capacitance	C <sub>rss</sub>	—	60	—	pF	

**Typical Electrical and Thermal Characteristics**



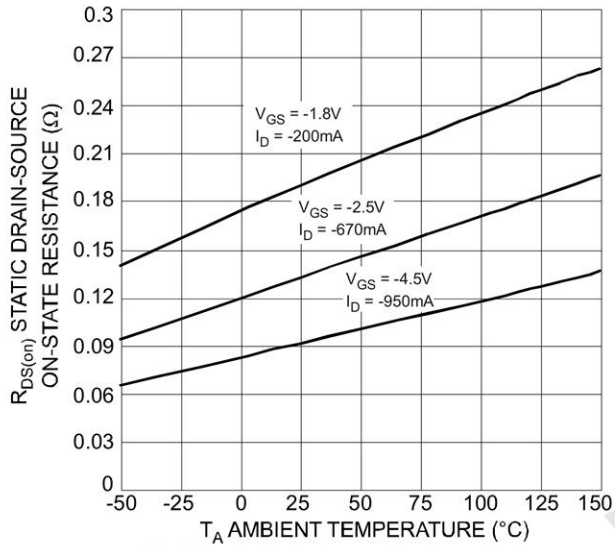


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

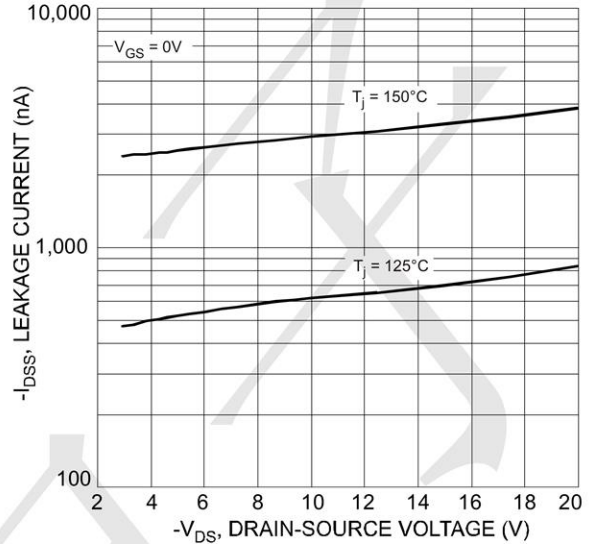


Fig. 8 Drain-Source Leakage Current vs. Voltage

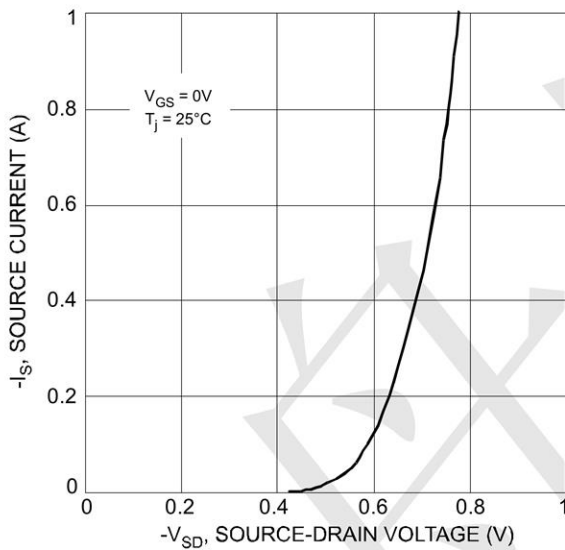
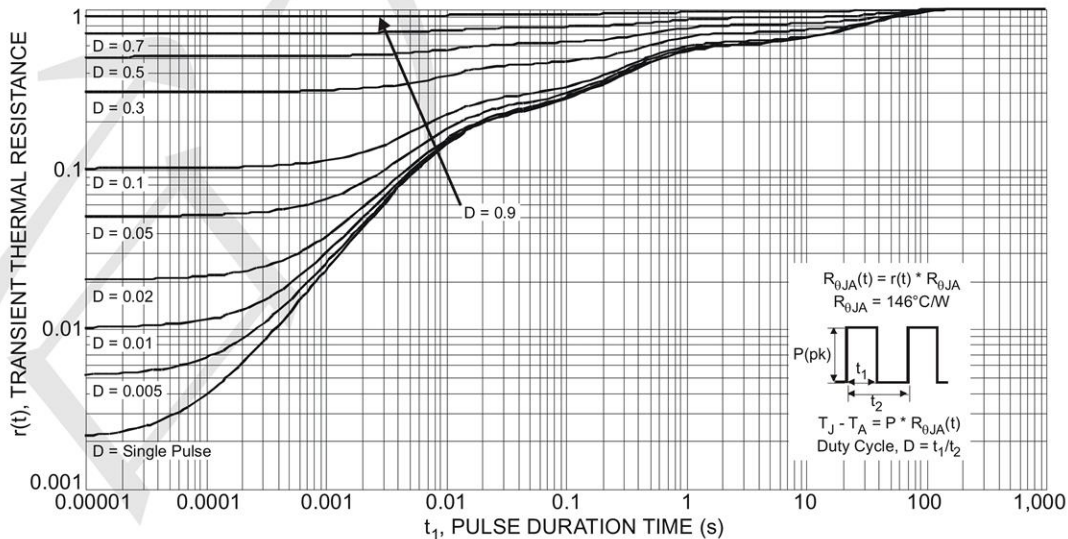
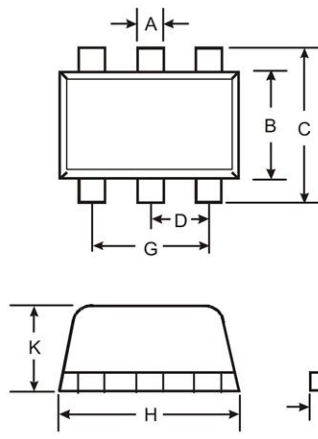


Fig. 9 Diode Forward Voltage vs. Current



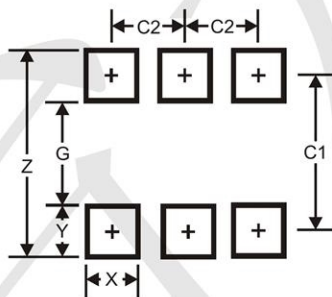


**SOT-563 Package Outline Drawing**



SOT563			
Dim	Min	Max	Typ
A	0.15	0.30	0.20
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	-	-	0.50
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.55	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	0.11
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.2
G	1.2
X	0.375
Y	0.5
C1	1.7
C2	0.5