

Features

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

Application

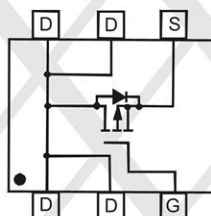
- Notebook
- Load Switch
- Networking
- Hand-held Instruments

Package and Pin Configuration

SOT-563

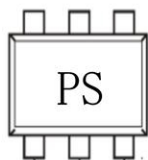


Top View



Top View
Internal Schematic

Marking:



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

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

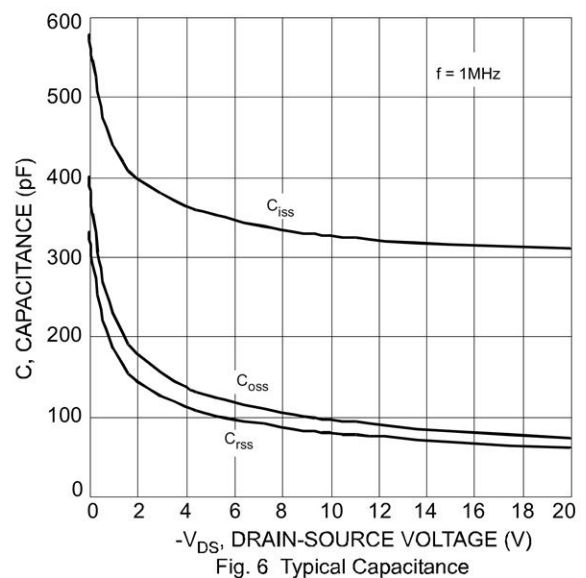
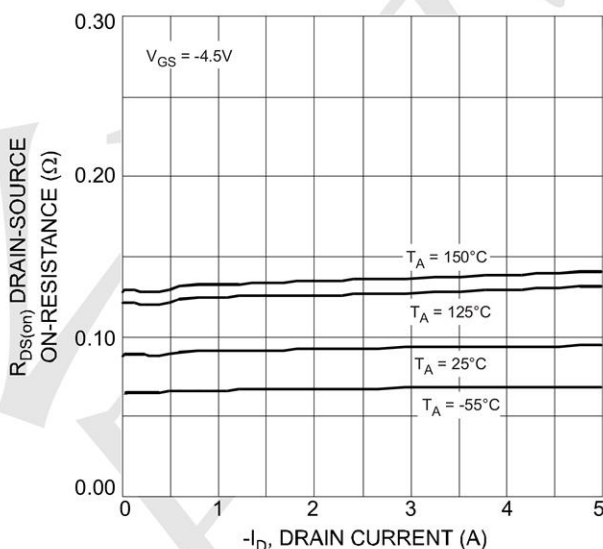
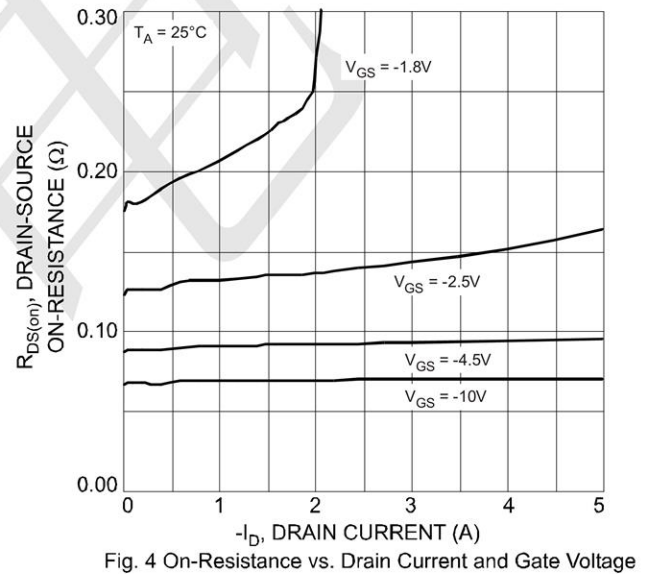
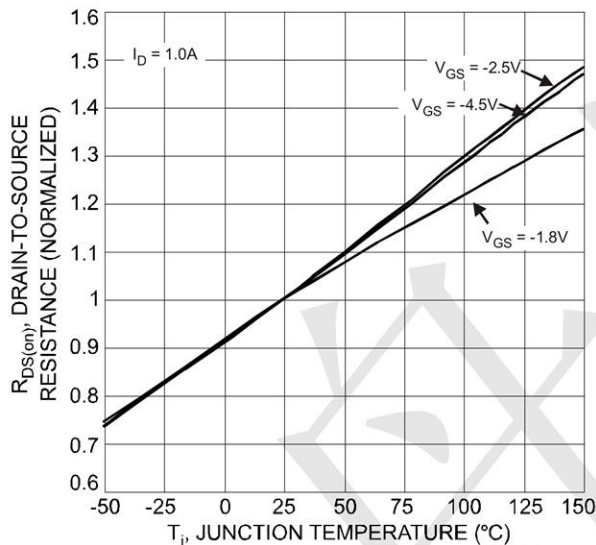
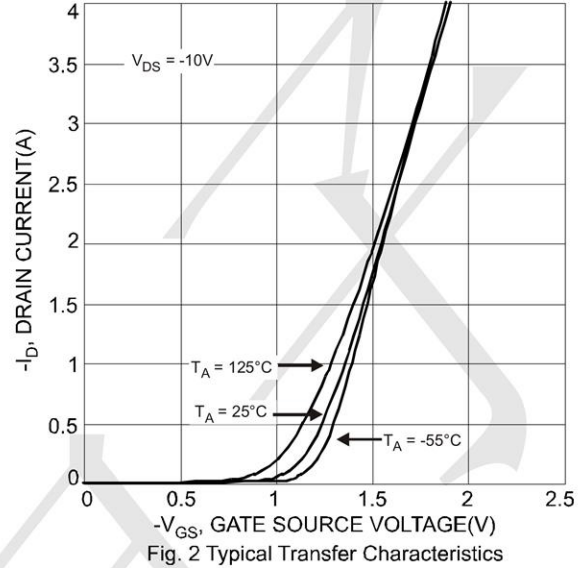
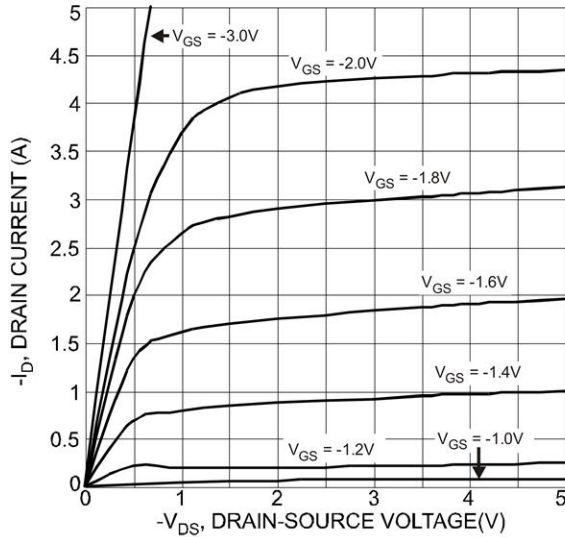
Thermal Characteristics

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

Electrical Characteristics (@T_A = +25°C unless otherwise specified.)

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

Typical Electrical and Thermal Characteristics



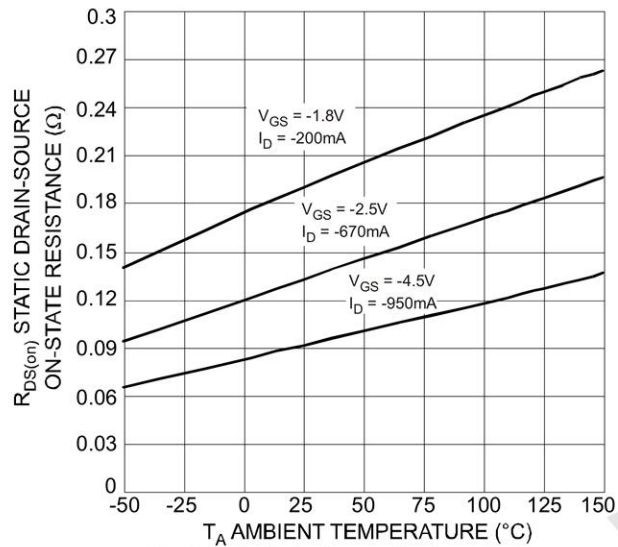


Fig. 7 Static Drain-Source On-State Resistance vs. Ambient Temperature

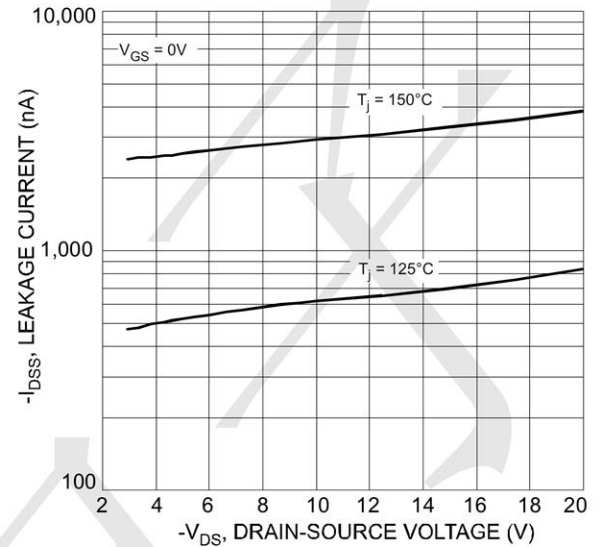


Fig. 8 Drain-Source Leakage Current vs. Voltage

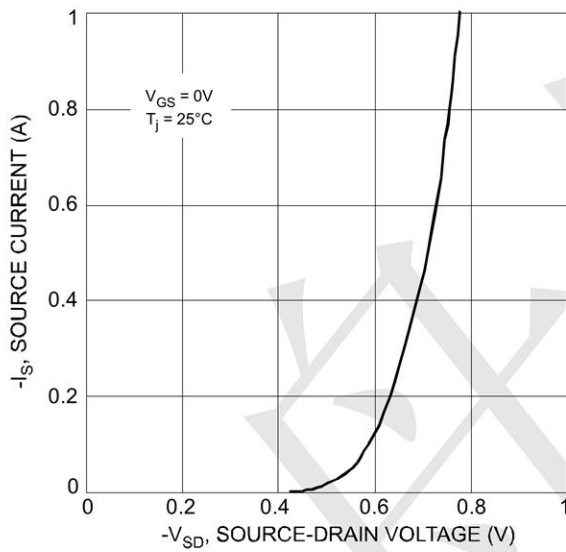
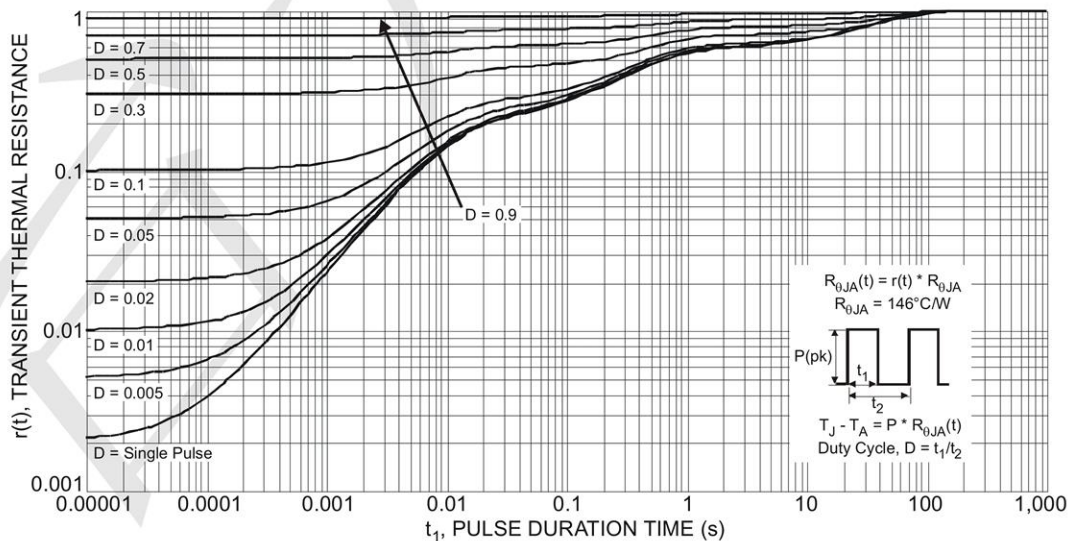
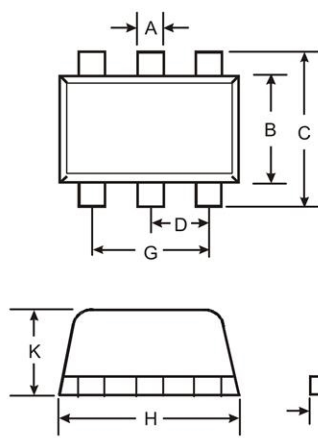


Fig. 9 Diode Forward Voltage vs. Current

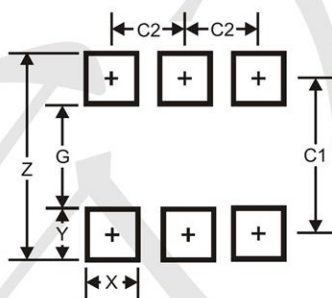


SOT-563 Package Outline Drawing



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