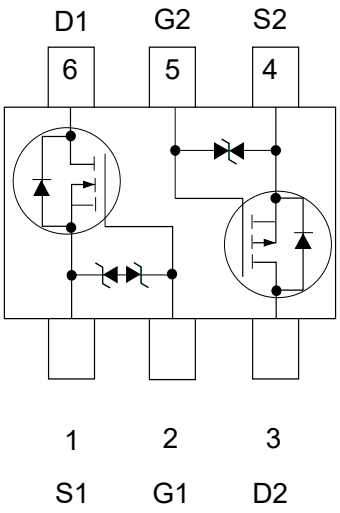
N-Channel and P-Channel,20V,Small signal MOSFET

Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(Ω)	I_D(A)
N-Channel 20	0.3@ V_{GS}=4.0V	0.6
	0.45@ V_{GS}=2.5V	
	0.6@ V_{GS}=1.8V	
P-Channel -20	0.9@ V_{GS}=-4.5V	-0.8
	1.2@ V_{GS}=-2.5V	
	1.5@ V_{GS}=-1.8V	



N-Channel

Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	V
Drain Current	Continuous	I_D	0.6	A
	Pulsed	I_D	3.0	A
Total Power Dissipation	T_A=25℃	P_D	170	mW
	T_A=125℃	P_D	155	mW

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =250μA,V_{GS}=0V	20		-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =20V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V,V_{GS}=±8V	-	-	±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5		1.1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.0V, I_D =300mA	-	0.3	0.5	Ω
		V_{GS}=2.5V, I_D =200mA	-	0.45	0.7	Ω
		V_{GS}=1.8V, I_D =150mA		0.6	0.9	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =16V, f=1MHz	-	135		pF
Output Capacitance	C_{DSS}		-	23		pF
Reverse Transfer Capacitance	C_{RSS}		-	18		pF
SWITCHING PARAMETERS						
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=10V, V_{GS} =4.5V, R_G=10Ω, I_D =0.2A	-		15	ns
Turn-Off Delay Time	$t_{d(off)}$		-		55	ns

P-Channel

Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	V
Drain Current	Continuous	I_D	-0.8	A
	Pulsed	I_D	-3	A
Total Power Dissipation	T_A=25℃	P_D	250	mW
	T_A=125℃	P_D	200	mW

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =-250μA,V_{GS}=0V	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =20V,V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V,V_{GS}=±8V	-	-	±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.5		-1.1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D =-200mA	-	0.9	1.2	Ω
		V_{GS}=-2.5V, I_D =-100mA	-	1.2	1.5	Ω
		V_{GS}=-1.8V, I_D =-100mA		1.5	2.2	Ω
Forward Tran conductance	g_{FS}	V_{GS}=5V, I_D =50mA, T_A=125℃		6.5		S
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-6V, f=200KMHz	-	200		pF
Output Capacitance	C_{DSS}		-	80		pF
Reverse Transfer Capacitance	C_{RSS}		-	150		pF
SWITCHING PARAMETERS						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-6V, V_{GS} =-4.5V, R_L=6Ω, R_G=6Ω, I_D =-1A	-		17	ns
Turn-Off Delay Time	$t_{d(off)}$		-		65	ns

N-Channel

Typical Characteristics

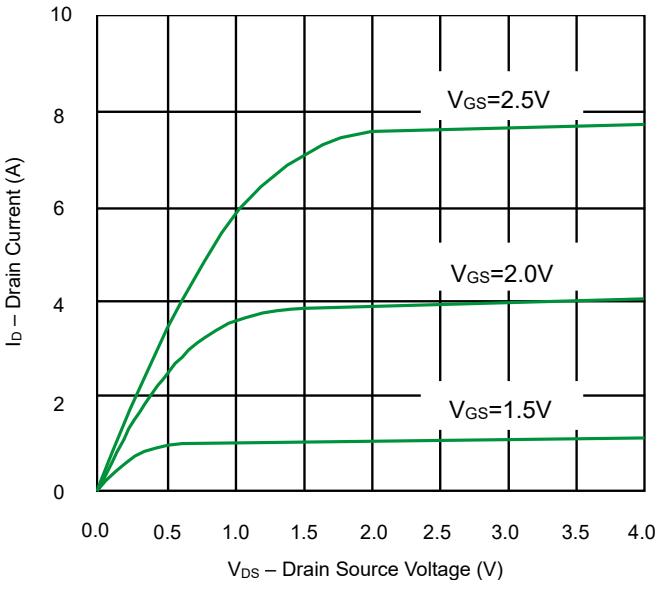


Fig 1. Output Characteristics

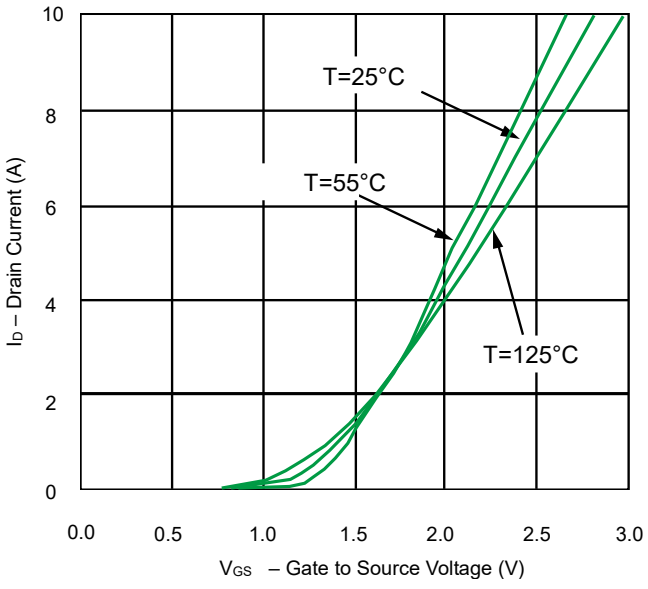


Fig 2. Transfer Characteristics

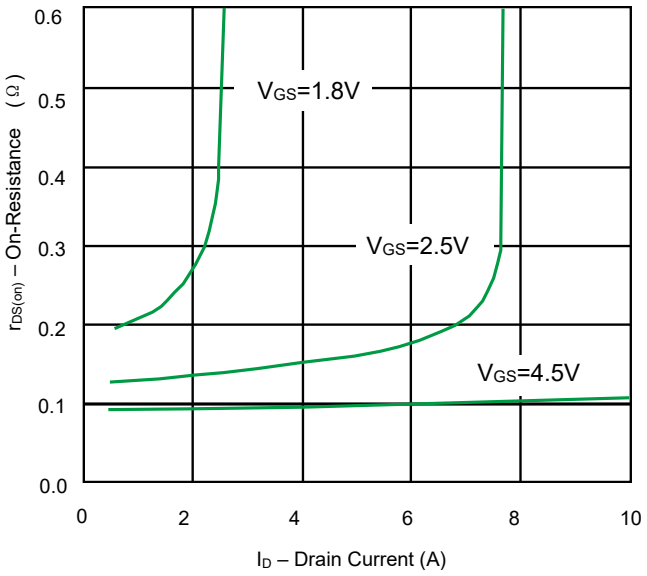


Fig 3. On-Resistance vs. Drain Current

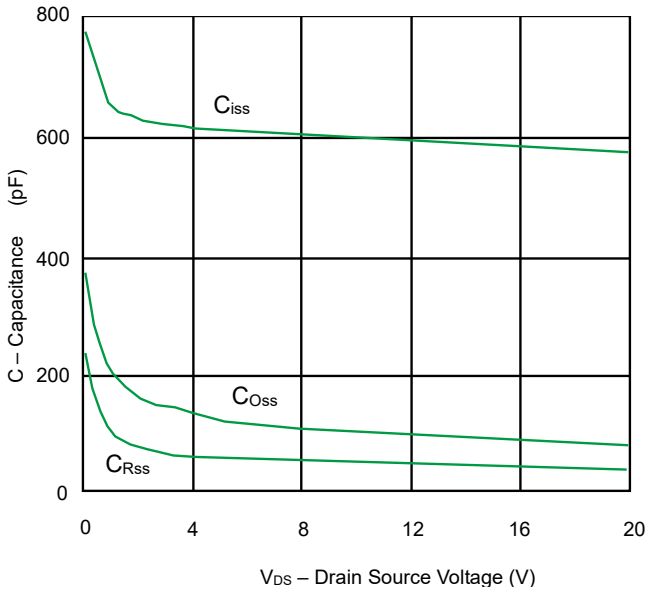


Fig 4. Capacitance

P-Channel

Typical Characteristics

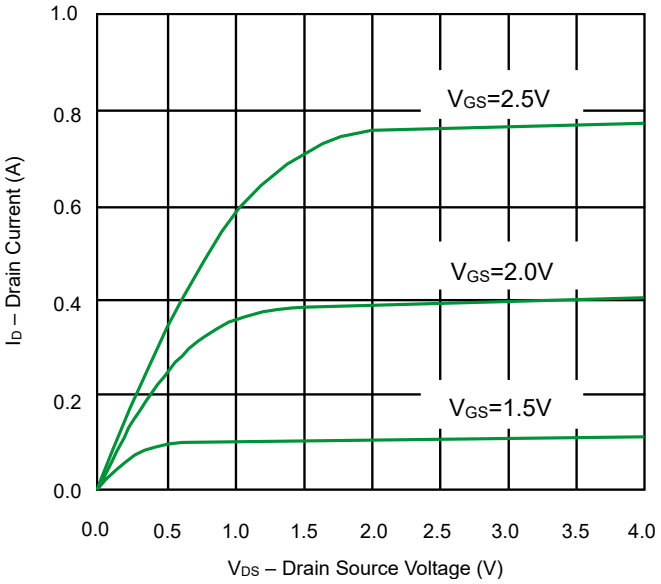


Fig 1. Output Characteristics

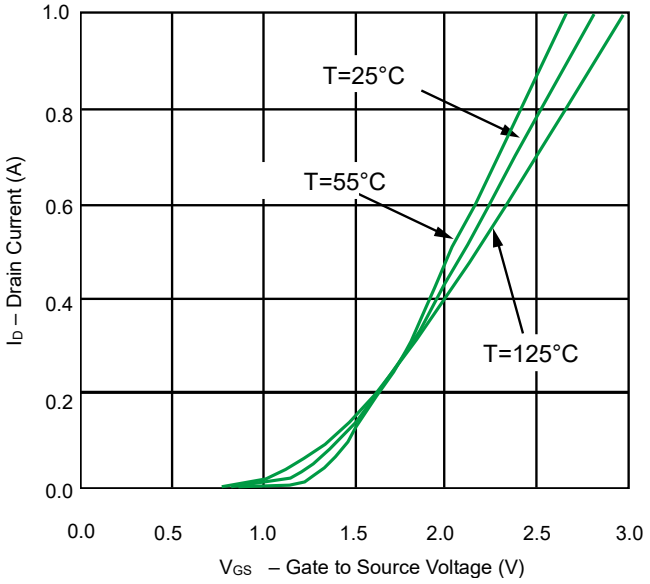


Fig 2. Transfer Characteristics

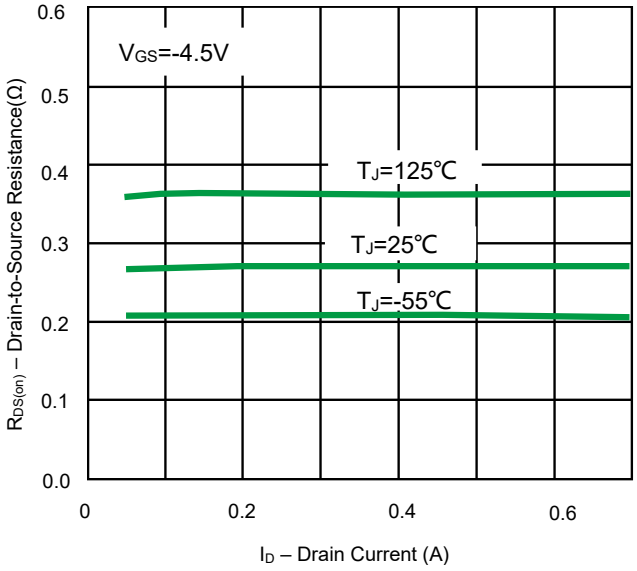


Fig 3. On-Resistance vs. Drain Current

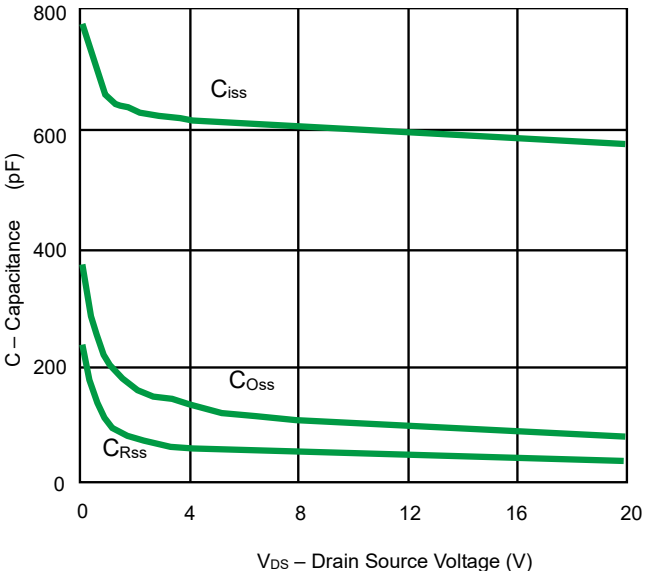
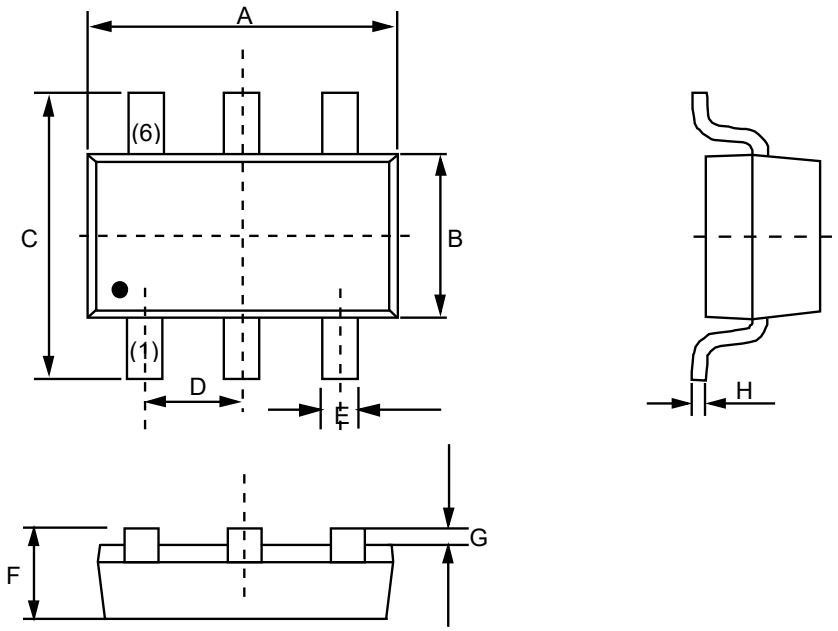


Fig 4. Capacitance

Product dimension (SOT-363)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.0	2.2	0.079	0.087
B	1.15	1.35	0.045	0.053
C	2.15	2.45	0.085	0.096
D	0.65BSC		0.026BSC	
E	0.15	0.35	0.006	0.014
F	0.90	1.10	0.035	0.043
G	0.00	0.10	0.000	0.004
H	0.08	0.15	0.003	0.006

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