N-Channel and P-Channel Complementary Power MOSFET

Product Summary

NMOS(Die1)

V_{DS}	20V
I_D	0.5A
$R_{DS(ON)}$(at V_{GS}=4.5V)	＜280 mohm
$R_{DS(ON)}$(at V_{GS}=2.5V)	＜400 mohm

ESD Protected Up to 2.0KV (HBM)

PMOS(Die2)

V_{DS}	-20V
I_D	-0.5A
$R_{DS(ON)}$(at V_{GS}=-4.5V)	＜850 mohm
$R_{DS(ON)}$(at V_{GS}=-2.5V)	＜1200 mohm

ESD Protected Up to 2.0KV (HBM)

General Description

Trench Power LV MOSFET technology
High Density Cell Design for Low $R_{DS(ON)}$
High Speed switching
Moisture Sensitivity Level 1
Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

Applications

Interfacing, Logic switch
Load switch
Power management

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-source Voltage		V_{DS}	20	-20	V
Gate-source Voltage		V_{GS}	±12	±12	V
Drain Current	T_C=25℃	I_D	0.5	-0.5	A
	T_C=70℃		0.4	-0.4	
Pulsed Drain Current [A]		I_{DM}	2.3	-2.3	A
Total Power Dissipation	T_C=25℃	P_D	0.3	0.3	W
Thermal Resistance Junction-to-Ambient @ Steady State [B]		R_{JA}	416	416	℃/ W
Junction and Storage Temperature Range		T_J ,T_{STG}	-55~+150	-55~+150	℃

N-MOS Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=250	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V			1	
		V_{GS}= ±10V, V_{DS}=0V		±1.5	±10	
				±500	±2000	nA

P-MOS Electrical Characteristics (TJ=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V,V_{GS}=0V,T_C=25℃			-1	
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±10V, V_{DS}=0V		±1.5	±10	
		V_{GS}= ±8V, V_{DS}=0V		±500	±2000	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250	-0.35	-0.62	-1.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -4.5V, I_D=-0.5A		610	850	
		V_{GS}= -2.5V, I_D=-0.3A		930	1200	
		V_{GS}= -1.8V, I_D=-0.2A		1100	1700	
Diode Forward Voltage	V_{SD}	I_S=-0.5A,V_{GS}=0V			-1.2	V
[redacted]					-0.5	A
Input Capacitance	C_{iss}	V_{DS}=-10V,V_{GS}=0V,f=1MHZ		70		pF

N-MOS Typical Performance Characteristics

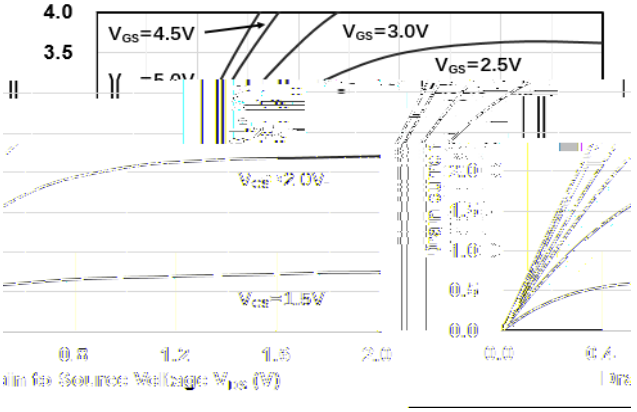


Figure1. Output Characteristics

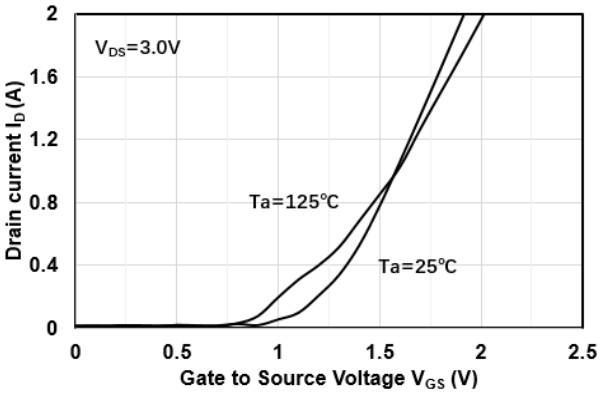


Figure2. Transfer Characteristics

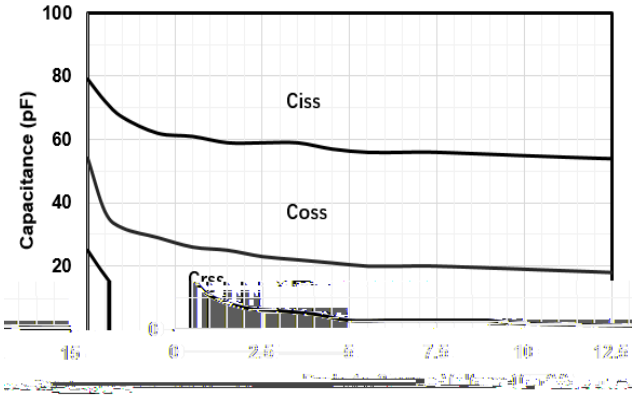


Figure3. Capacitance Characteristics

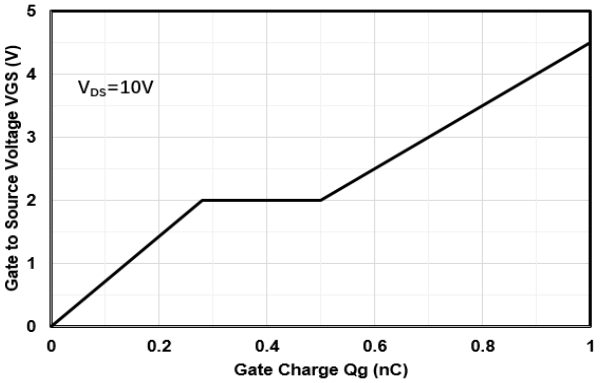


Figure4. Gate Charge

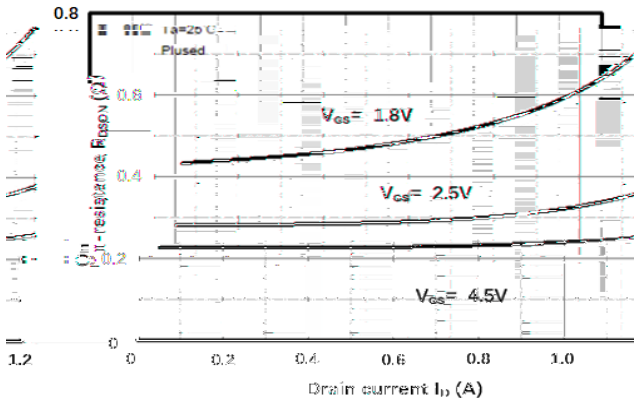


Figure5. Drain-Source on Resistance

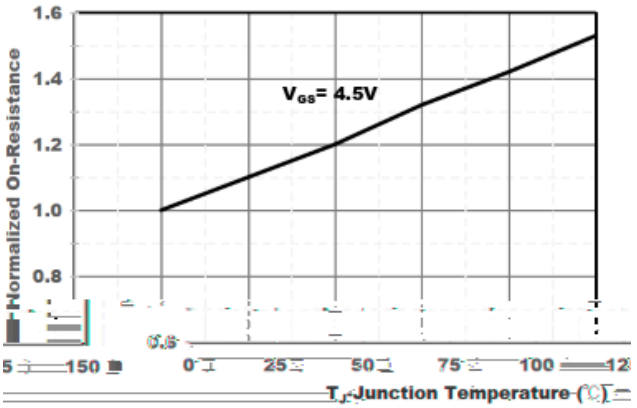


Figure6. Drain-Source on Resistance

P-MOS Typical Performance Characteristics

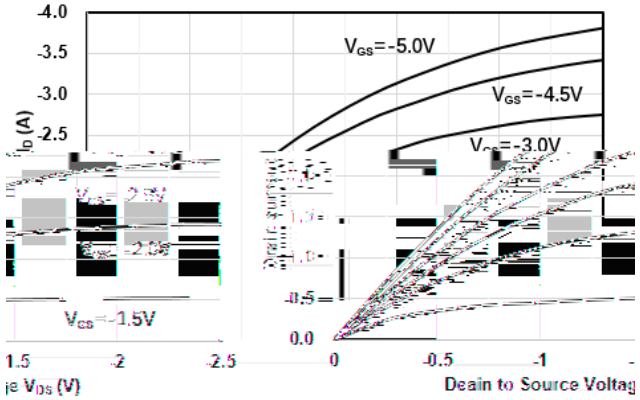


Figure1. Output Characteristics

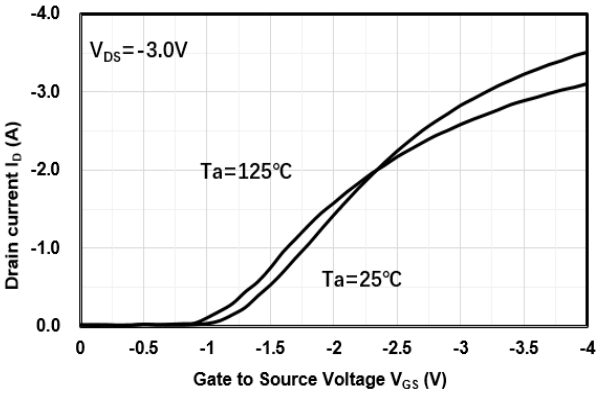


Figure2. Transfer Characteristics

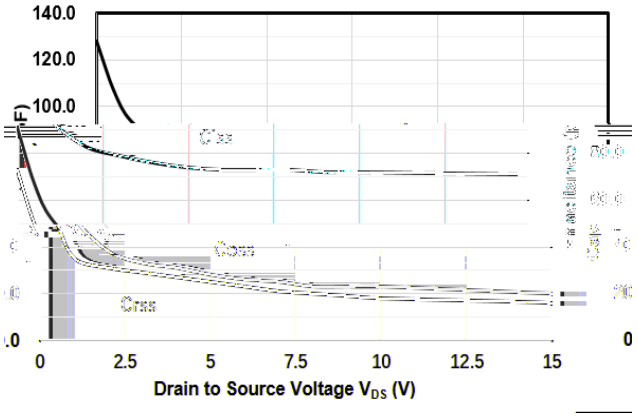


Figure3. Capacitance Characteristics

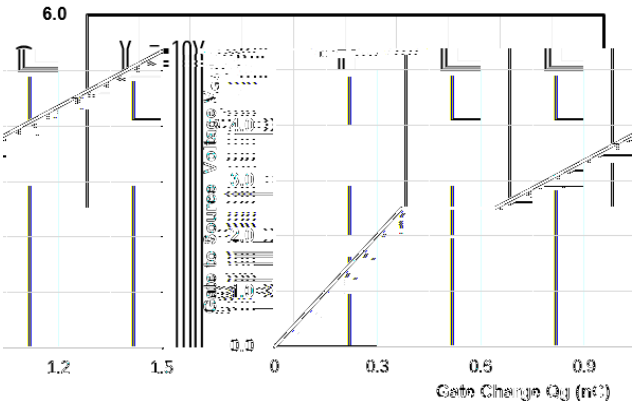


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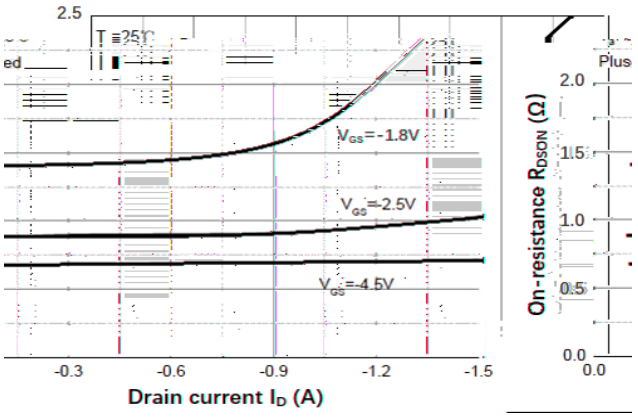


Figure5. Drain-Source on Resistance

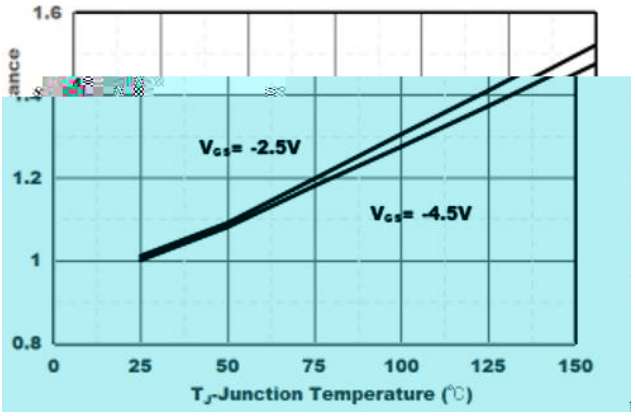
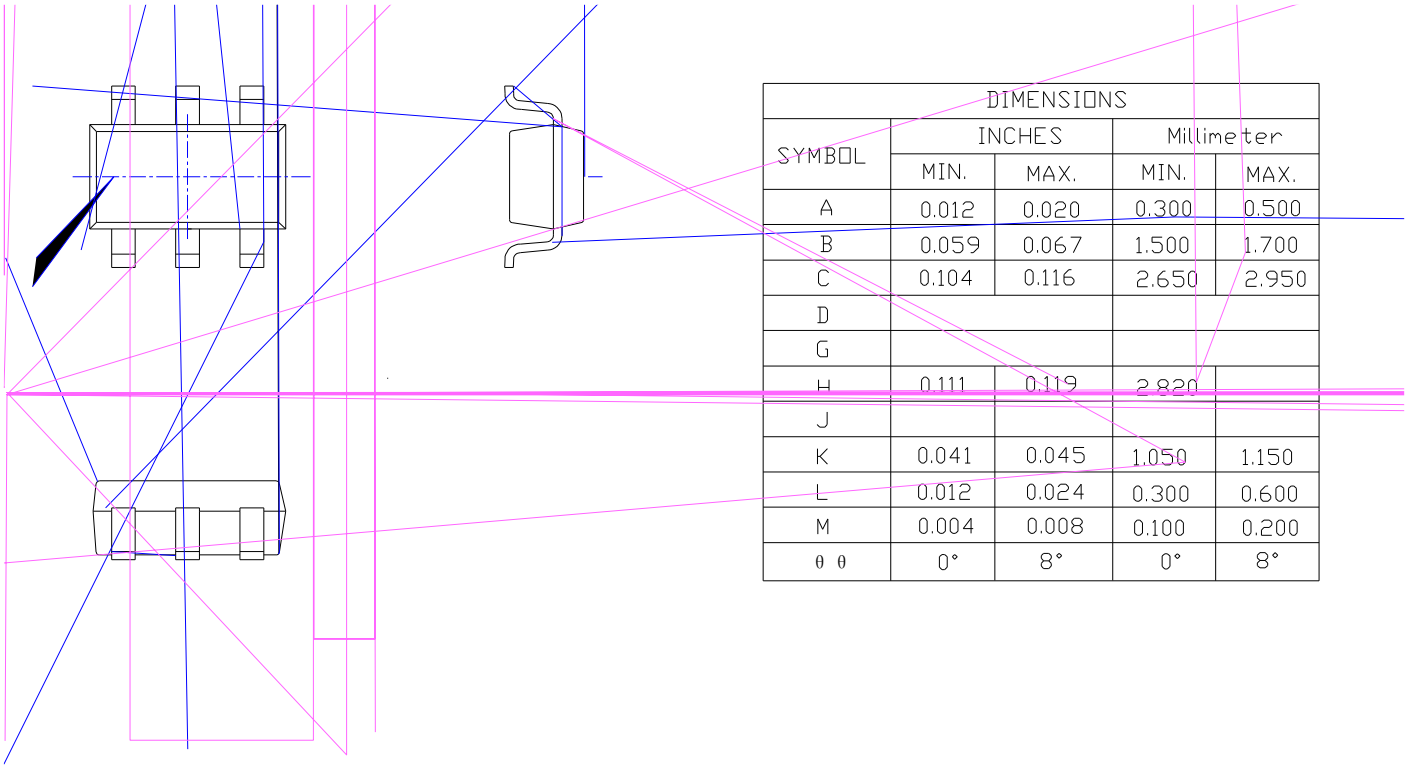


Figure6. Drain-Source on Resistance

SOT-23-6L Package Information



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.300	0.500
B	0.059	0.067	1.500	1.700
C	0.104	0.116	2.650	2.950
D				
G				
H	0.111	0.119	2.820	
J				
K	0.041	0.045	1.050	1.150
L	0.012	0.024	0.300	0.600
M	0.004	0.008	0.100	0.200
θ θ	0°	8°	0°	8°

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