

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	160mΩ@10V	2.5A
-100V	230mΩ@-10V	-2.5A

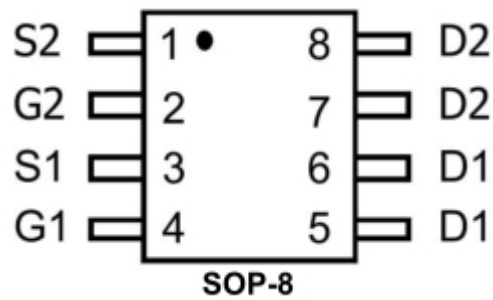
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge
- Fast Switching Speed

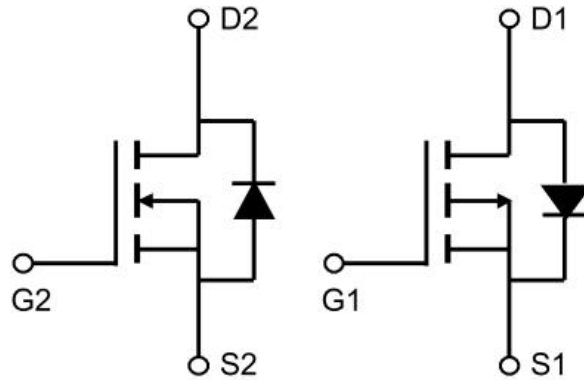
Applications

- Motor Control
- DC-DC Converters
- Power Management

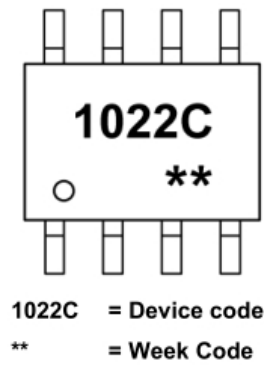
Package



Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V_{DS}	100	-100	V
Gate-Source Voltage	V_{GS}	± 20	± 20	V
Continuous Drain Current	I_D	2.5	-2.5	mA
Power Dissipation	P_D	2	2	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5		$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150		$^{\circ}\text{C}$

N-Channel Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

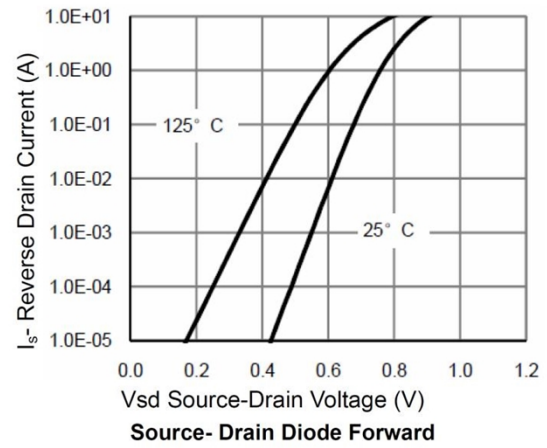
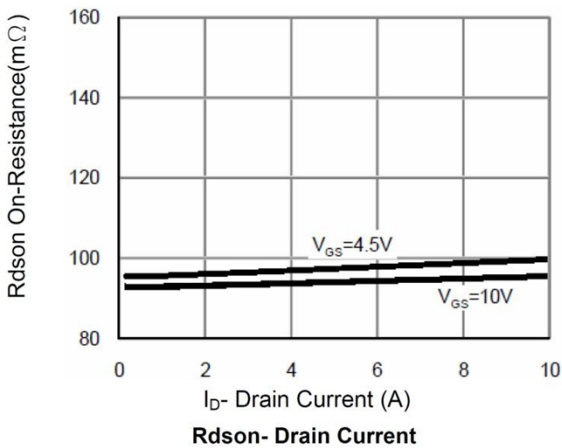
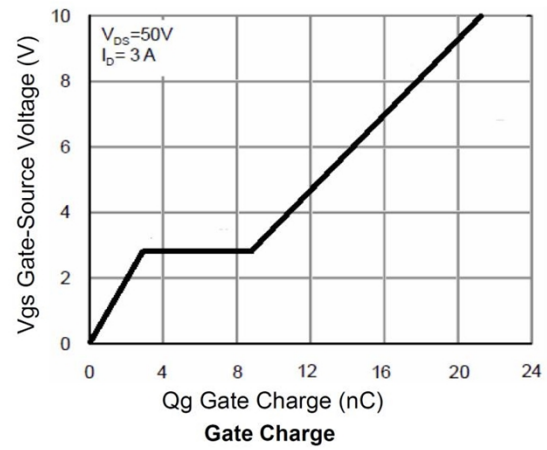
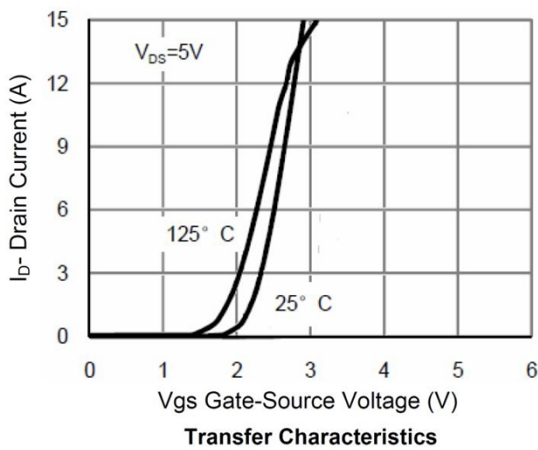
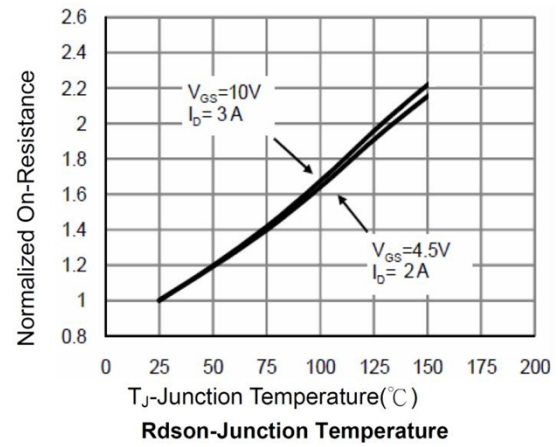
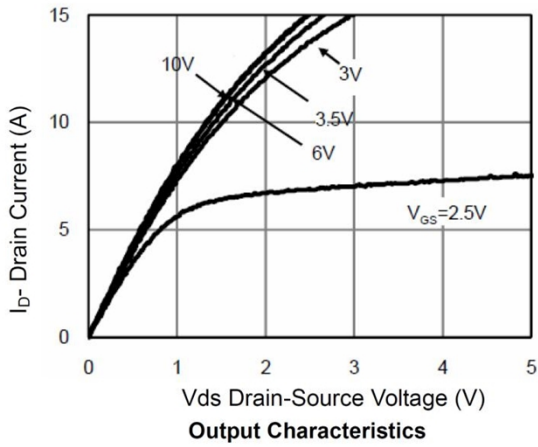
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V, V _{GS} = 0V			1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±0.1	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.5	2.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =2A		160	210	mΩ
		V _{GS} =4.5V, I _D =1.5A		230	300	
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, f=1MHz		498		pF
Output capacitance	C _{oss}			30		
Reverse transfer capacitance	C _{rss}			19		
Switching Characteristics						
Total gate charge	Q _g	V _{DS} =50V , V _{GS} =10V , I _D =1.6A		9.3		nC
Gate-source charge	Q _{gs}			1.8		
Gate-drain charge	Q _{gd}			2.5		
Turn-on Delay Time	T _{d(on)}	V _{DD} =50V, V _{GS} =10V, R _G =6Ω , I _D =1A		3		nS
Turn-on Rise Time	T _r			2		
Turn-Off Delay Time	T _{d(off)}			12		
Turn-Off Fall Time	t _f			6		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} = 0V, T _J =25°C			1.2	V

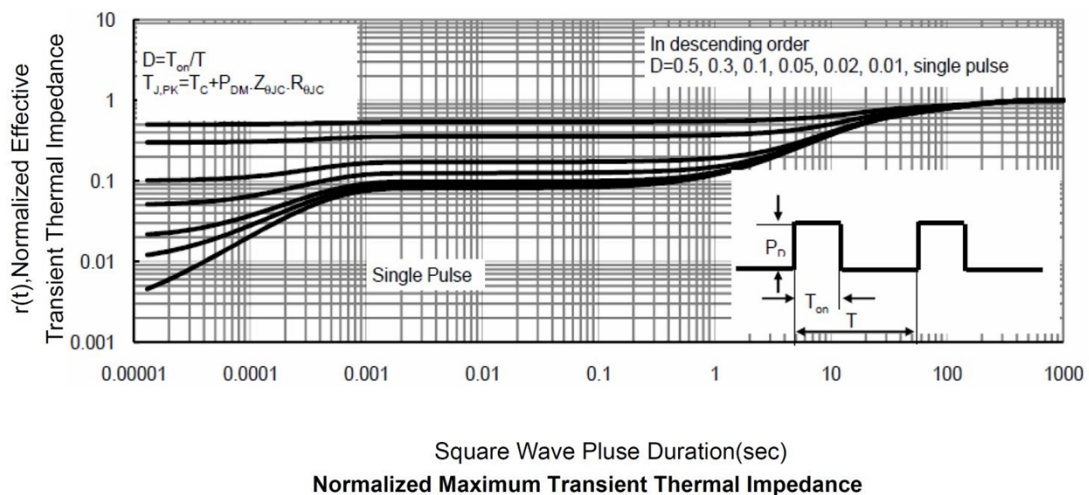
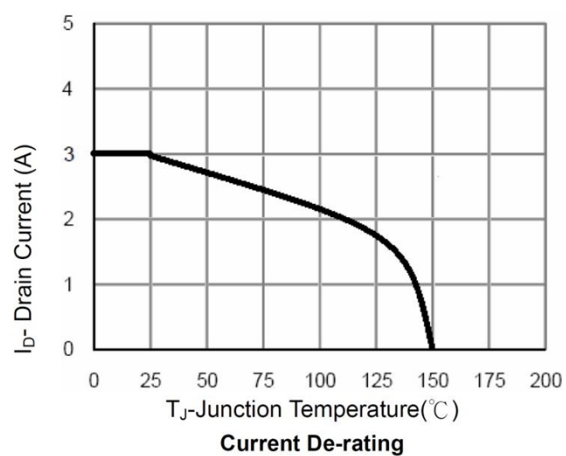
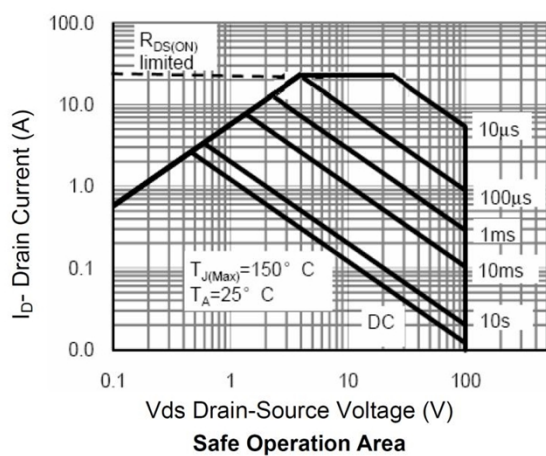
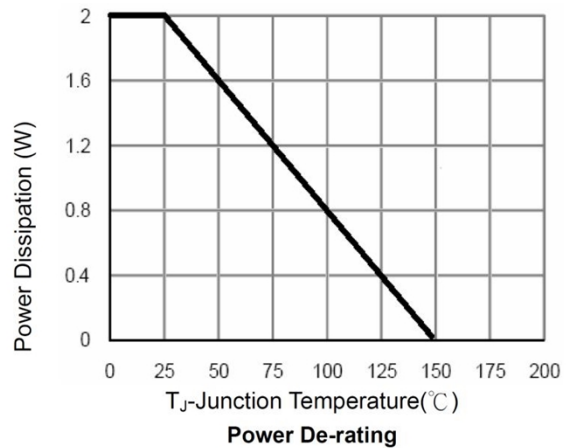
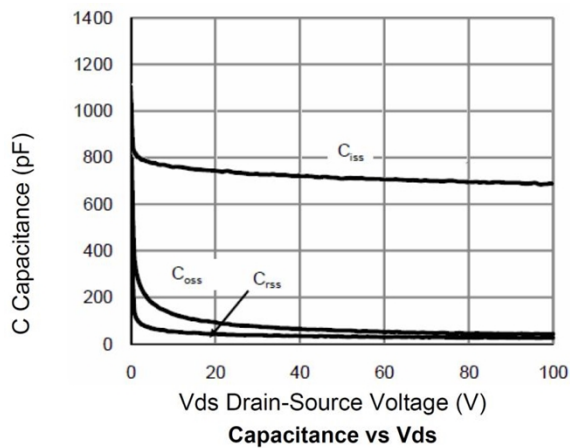
P-Channel Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

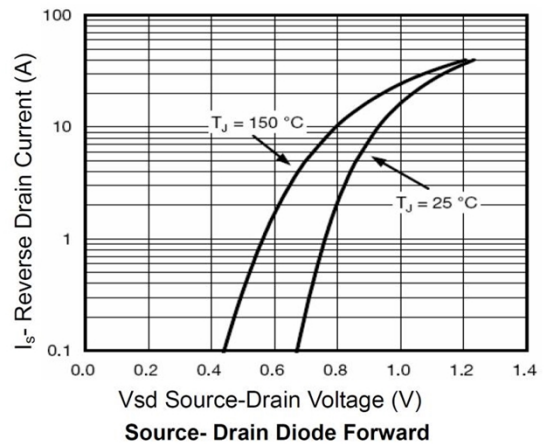
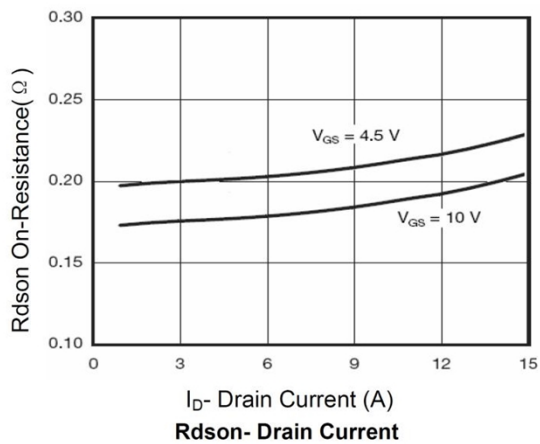
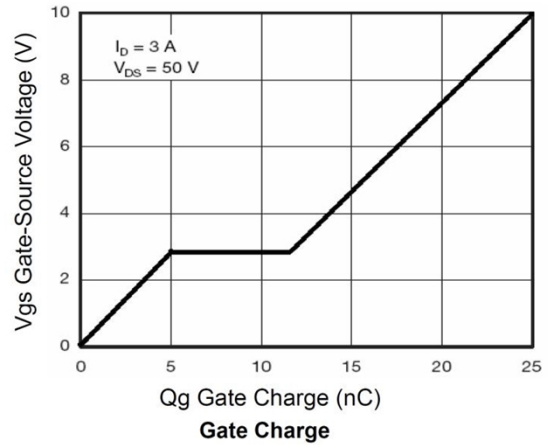
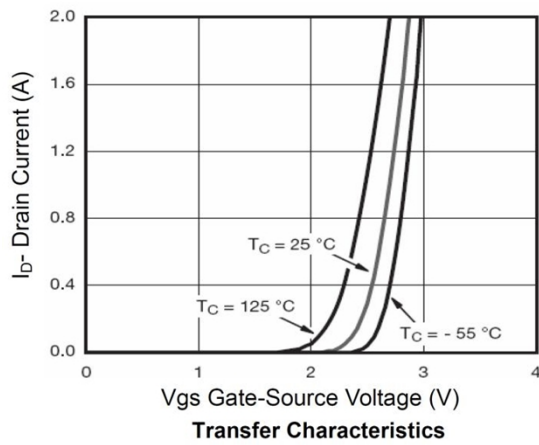
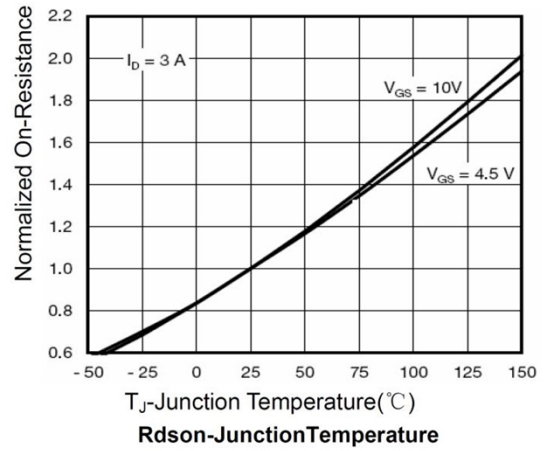
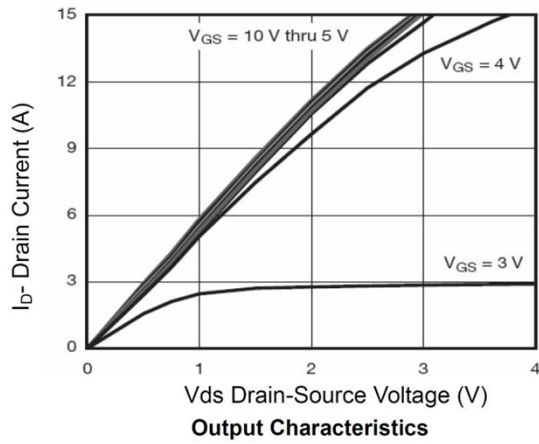
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -80V, V_{GS} = 0V$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.5	-2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -1A$		160	210	m Ω
		$V_{GS} = -4.5V, I_D = -1A$		230	300	
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS} = -50V, V_{GS} = 0V, f = 1MHz$		730		pF
Output capacitance	C_{oss}			60		
Reverse transfer capacitance	C_{rss}			45		
Switching Characteristics						
Total gate charge	Q_g	$V_{DS} = -50V, V_{GS} = -10V, I_D = -2.1A$		16		nC
Gate-source charge	Q_{gs}			2.5		
Gate-drain charge	Q_{gd}			4.8		
Turn-on Delay Time	$T_{d(on)}$	$V_{DD} = -50V, I_D = -1A, V_{GS} = -10V, R_{GEN} = 6\Omega$		4.3		nS
Turn-on Rise Time	T_r			5.8		
Turn-Off Delay Time	$T_{d(off)}$			21		
Turn-Off Fall Time	t_f			11		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{SD}	$I_S = 1A, V_{GS} = 0V$			-1.2	V

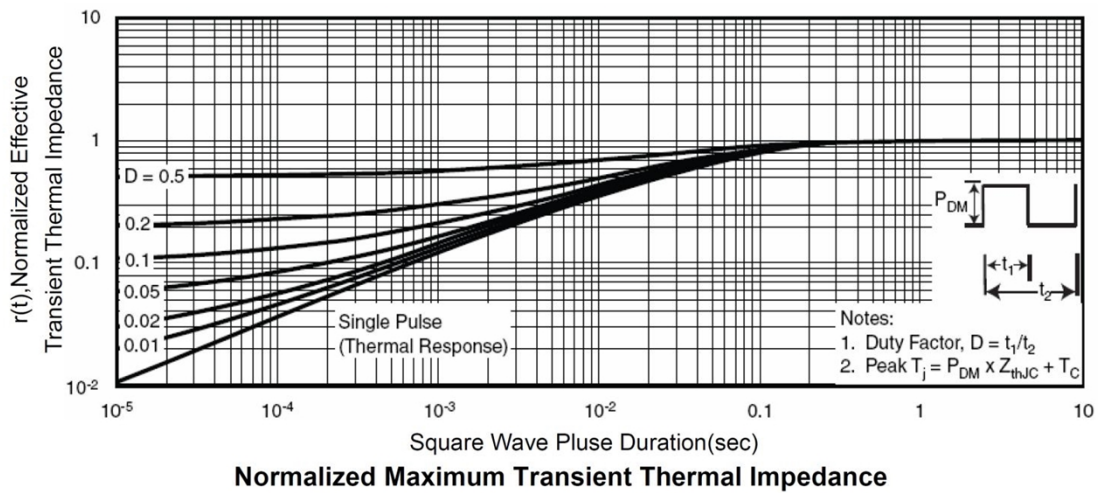
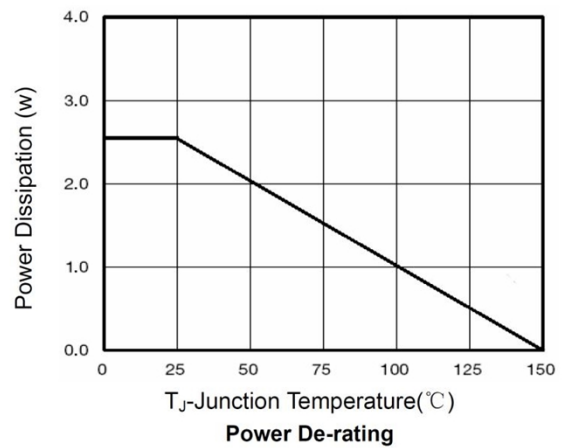
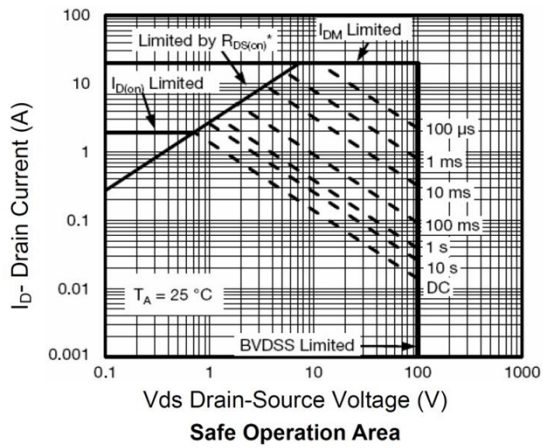
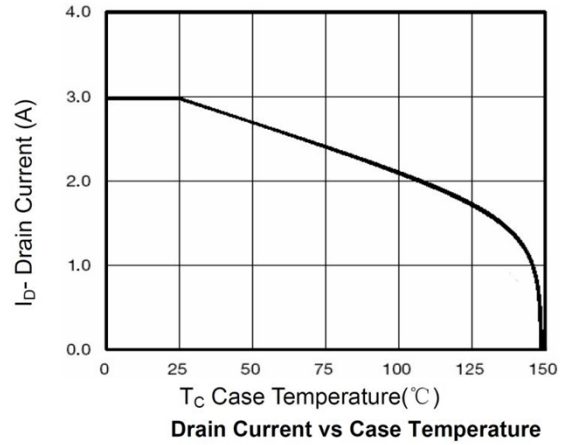
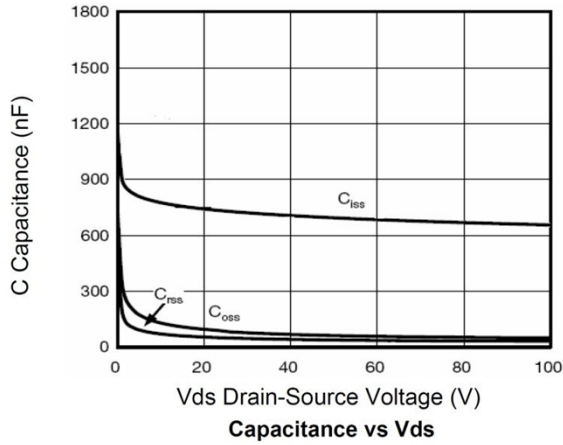
N-Channel Typical Characteristics



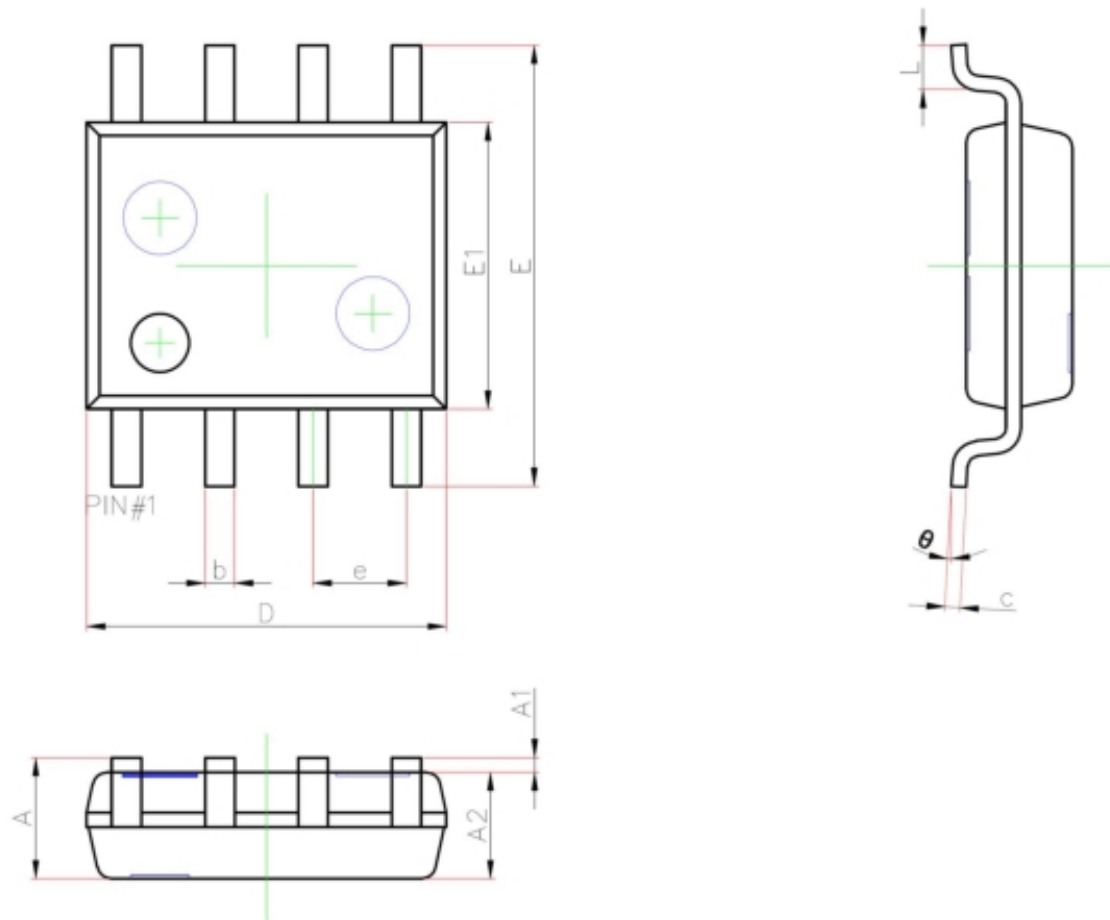


P-Channel Typical Characteristics





SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°