

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D	$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
100V	50mΩ@10V	6A	-100V	115mΩ@-10V	-6A
	60mΩ@4.5V			135mΩ@-4.5V	

Feature

- High power and current handing capability
- Surface mount package

Application

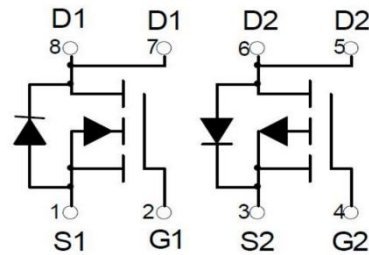
- Load Switch
- Battery Switch
- Power Management
- Motor Control

Package

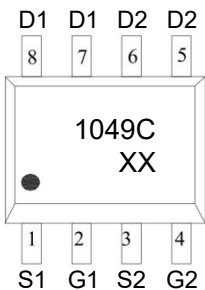


SOP-8

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	N-Channel	p-Channel	Unit
Drain-Source Voltage	V_{DS}	100	-100	V
Gate-Source Voltage	V_{GS}	± 20	± 20	V
Continuous Drain Current	I_D	6	-6	A
Pulsed Drain Current ¹⁾	I_{DM}	24	-24	A
Power Dissipation	P_D	1.8	3	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	69.5	41.7	°C/W
Junction Temperature	T_J	150	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	-55 ~ +150	°C

N-CH Electrical characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	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	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$		40	50	$m\Omega$
		$V_{GS} = 4.5V, I_D = 3A$		45	60	$m\Omega$
Dynamic characteristics³⁾						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		2960		pF
Output Capacitance	C_{oss}			94		
Reverse Transfer Capacitance	C_{rss}			52		
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 4.5V, I_D = 6A$		75		nC
Gate-Source Charge	Q_{gs}			8.6		
Gate-Drain Charge	Q_{gd}			19		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V$ $R_G = 3\Omega, I_D = 5A$		5.3		nS
Turn-on rise time	t_r			7.1		
Turn-off delay time	$t_{d(off)}$			15.8		
Turn-off fall time	t_f			4.8		
Source-Drain Diode characteristics						
Diode Forward voltage ²⁾	V_{SD}	$V_{GS} = 0V, I_S = 1A, T_J = 25^\circ C$			1.2	V

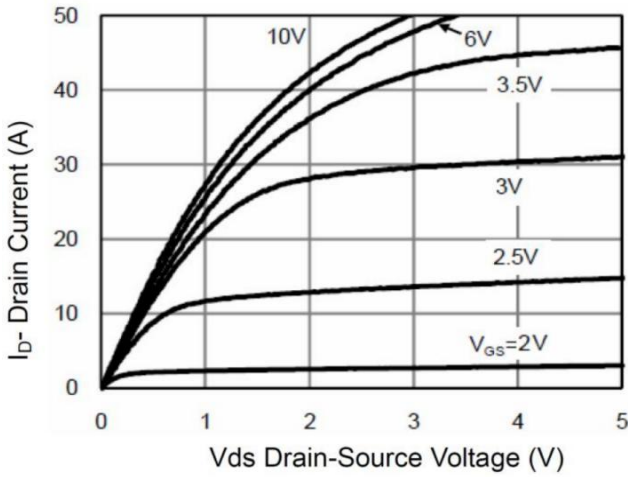
P-CH Electrical characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-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} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.8	-2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -5A		90	115	mΩ
		V _{GS} = -4.5V, I _D = -3A		100	135	mΩ
Dynamic characteristics³⁾						
Input Capacitance	C _{iss}	V _{DS} = -50V, V _{GS} = 0V, f = 1MHz		2134		pF
Output Capacitance	C _{oss}			567		
Reverse Transfer Capacitance	C _{rss}			135		
Total Gate Charge	Q _g	V _{DS} = -50V, V _{GS} = -10V, I _D = -5A		60		nC
Gate-Source Charge	Q _{gs}			15		
Gate-Drain Charge	Q _{gd}			28		
Turn-on delay time	t _{d(on)}	V _{DD} = -50V, V _{GS} = -10V, R _G = 2.5Ω, I _D = -5A		8		nS
Turn-on rise time	t _r			15		
Turn-off delay time	t _{d(off)}			23		
Turn-off fall time	t _f			9		
Source-Drain Diode characteristics						
Diode Forward voltage ²⁾	V _{SD}	V _{GS} = 0V, I _S = -1A, T _J = 25°C			-1.2	V

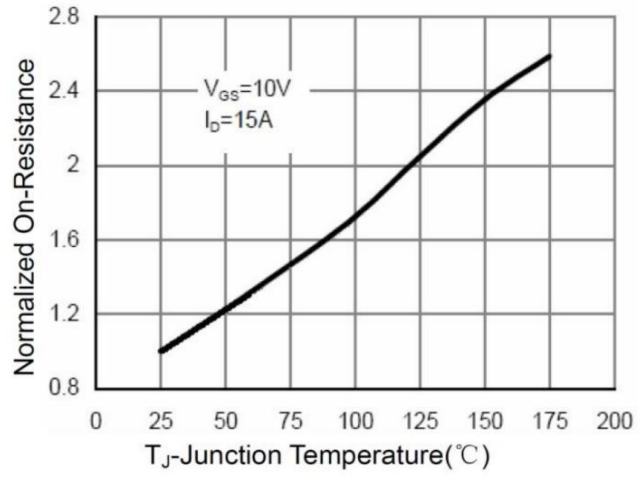
Notes:

- 1) Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2) Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- 3) Guaranteed by design, not subject to production.

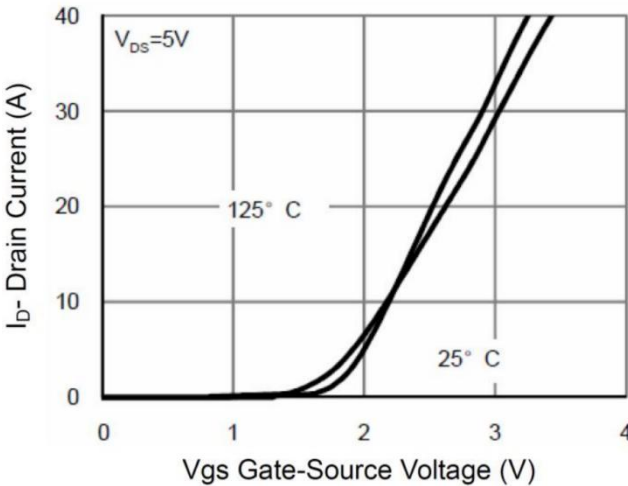
N- Channel Typical Characteristics



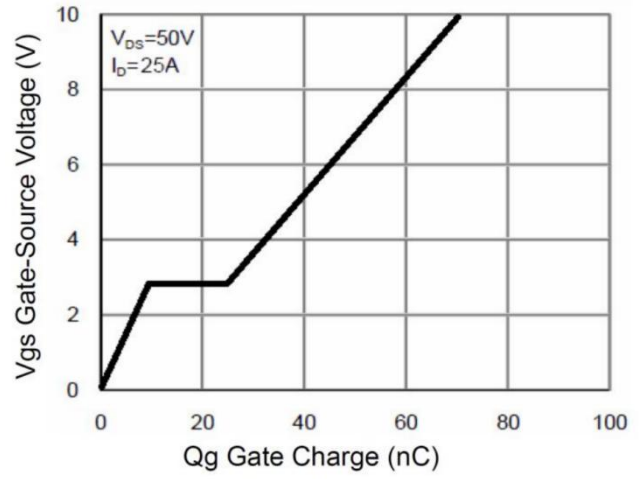
Output Characteristics



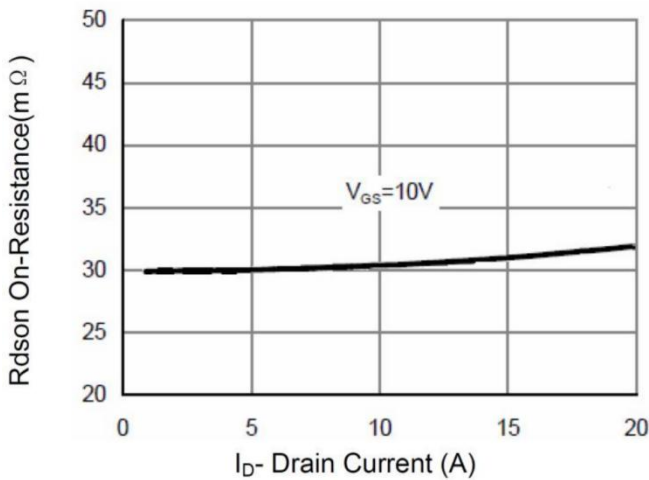
Rdson-Junction Temperature



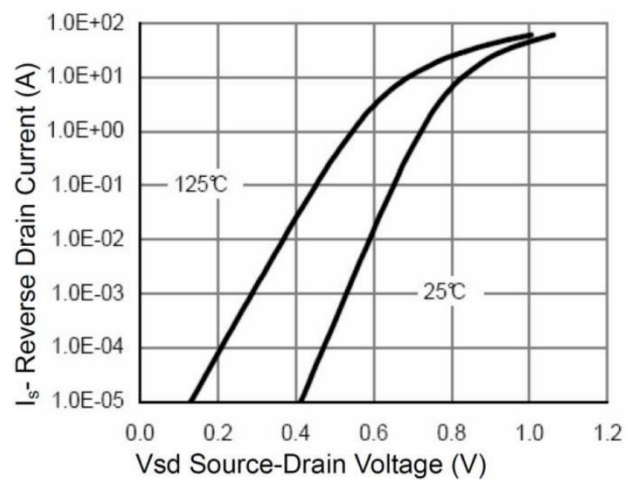
Transfer Characteristics



Gate Charge

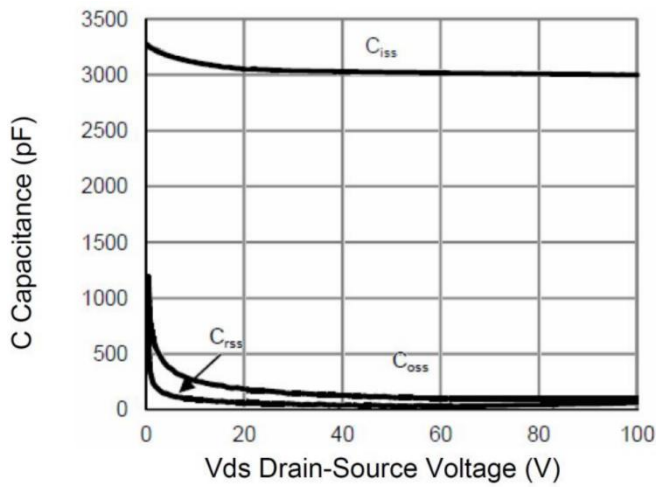


Rdson- Drain Current

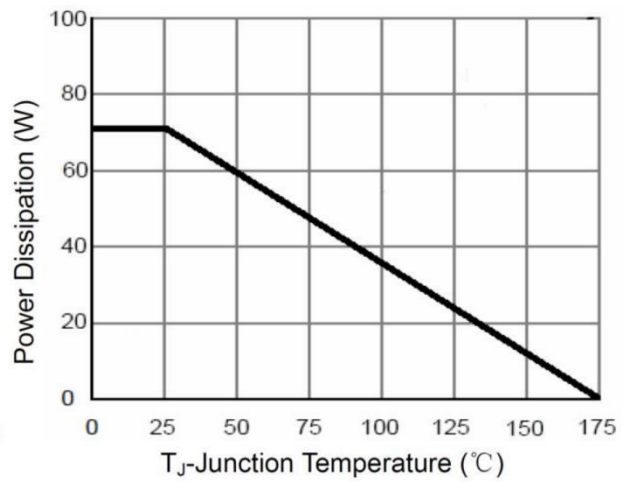


Source- Drain Diode Forward

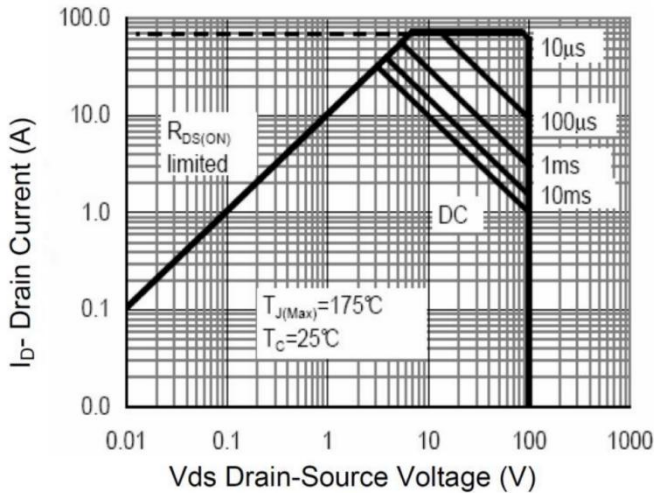
N- Channel Typical Characteristics



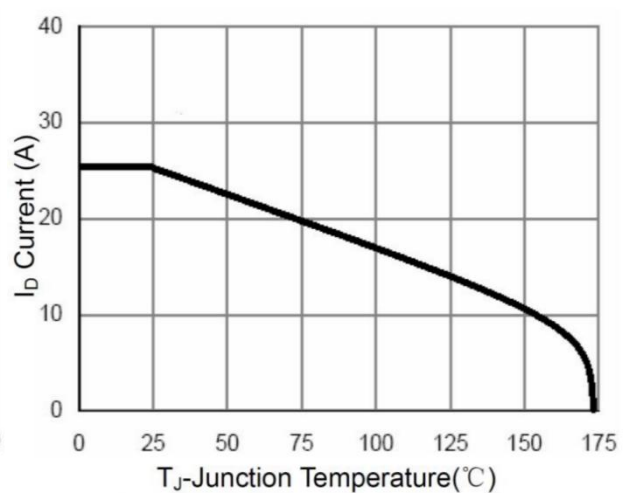
Capacitance vs Vds



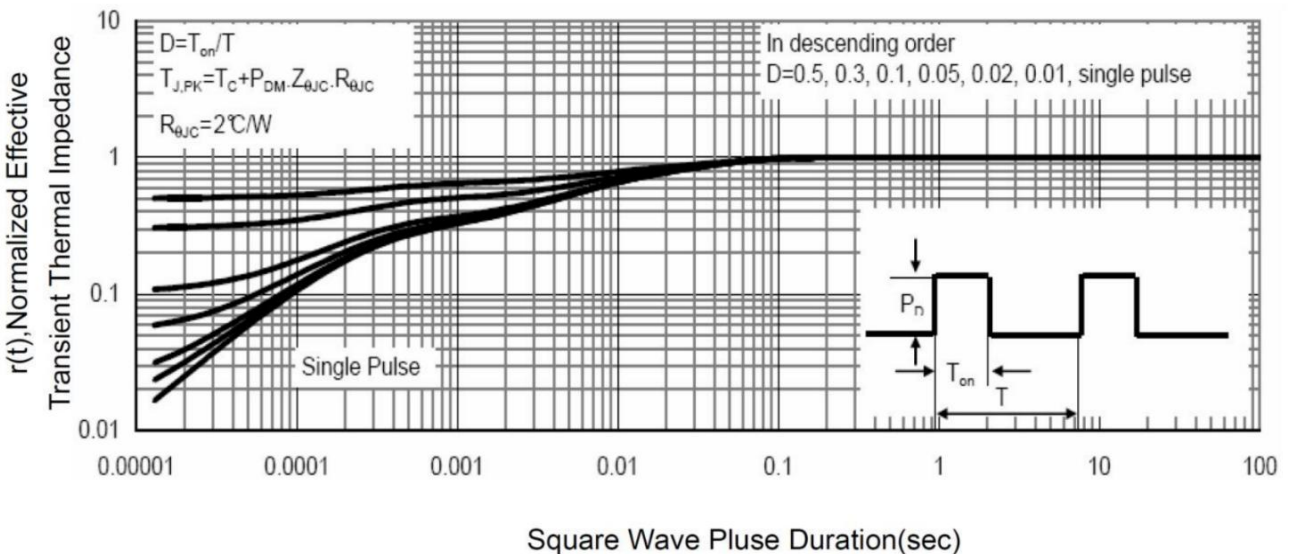
Power De-rating



Safe Operation Area

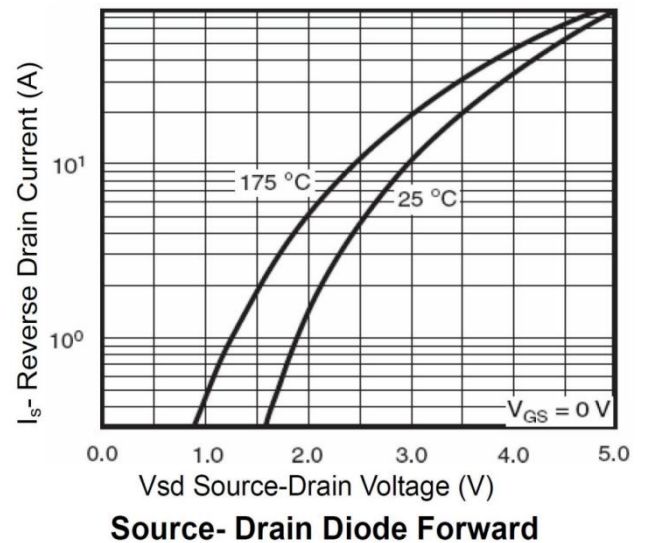
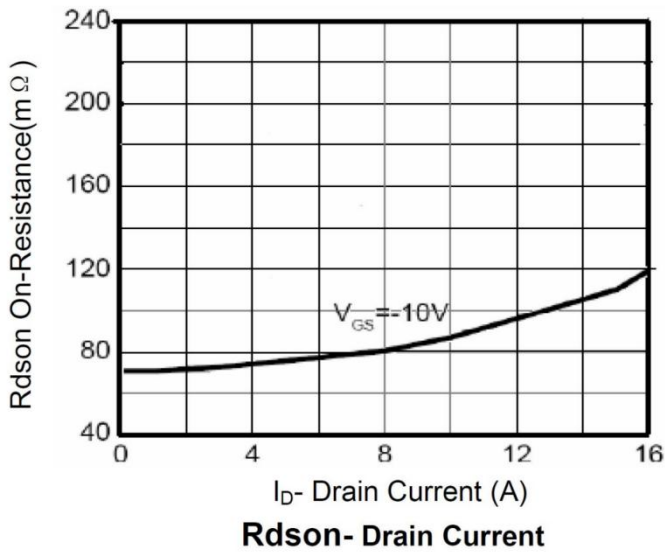
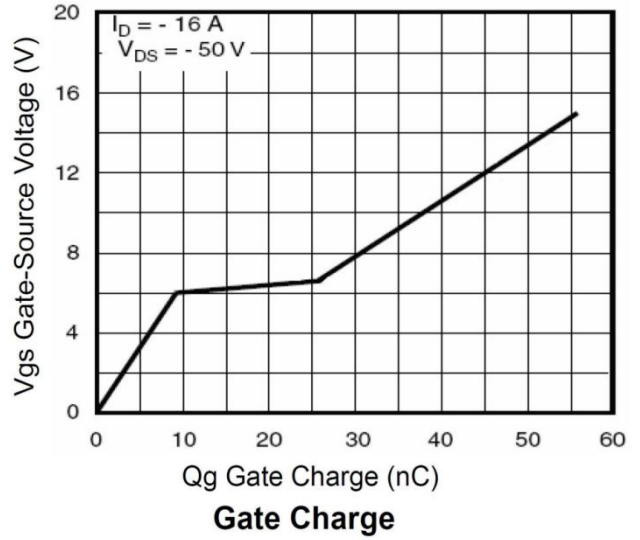
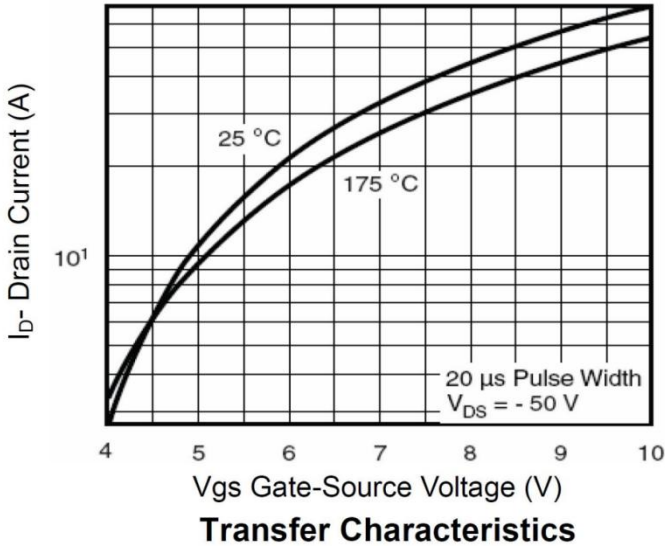
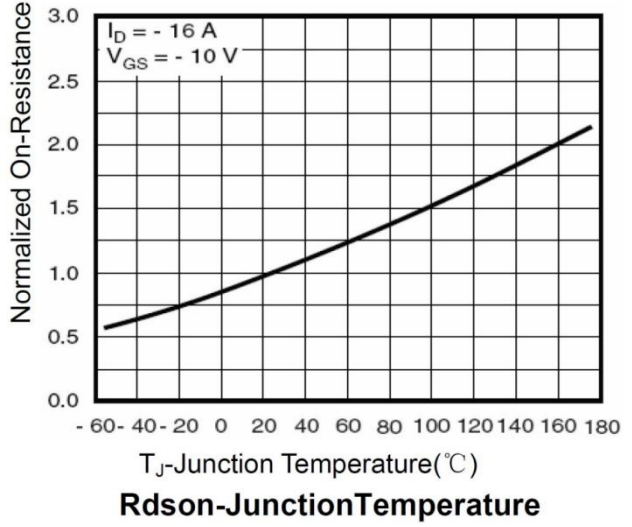
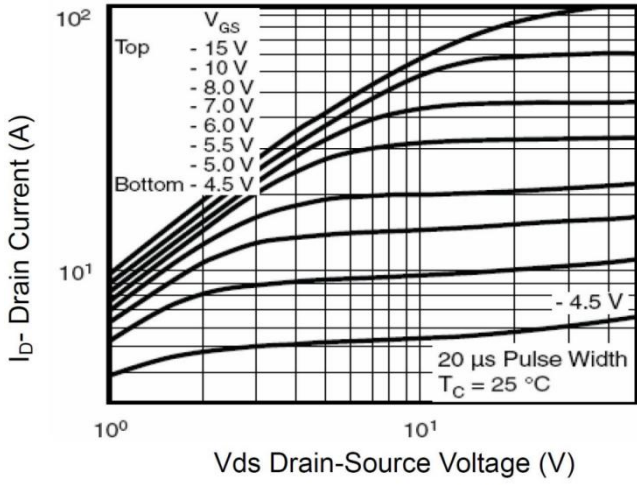


ID Current- Junction Temperature

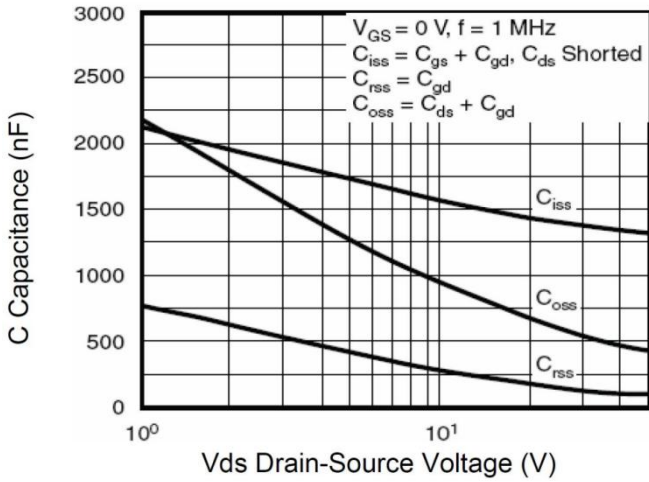


Normalized Maximum Transient Thermal Impedance

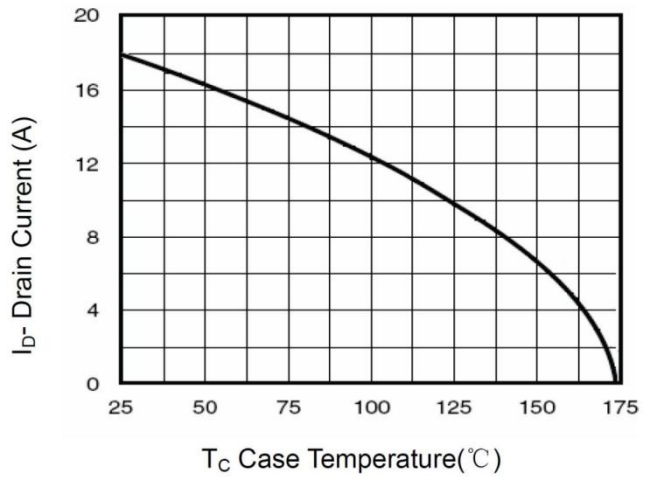
P- Channel Typical Characteristics



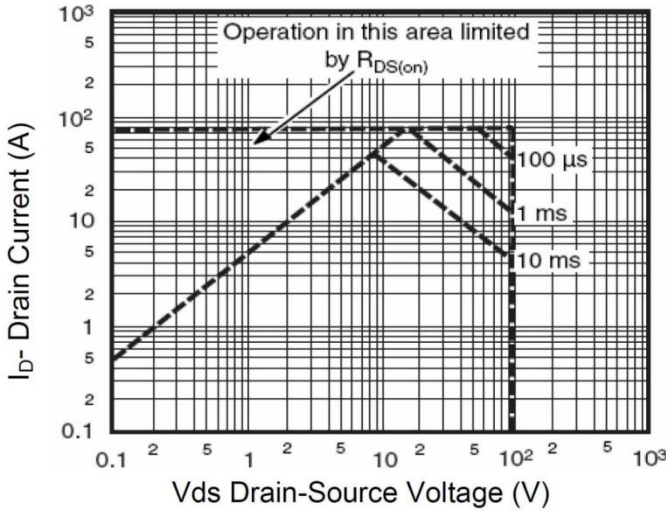
P- Channel Typical Characteristics



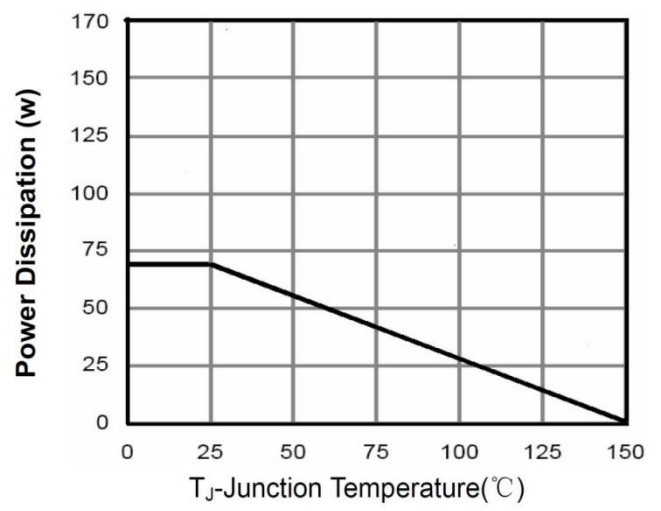
Capacitance vs Vds



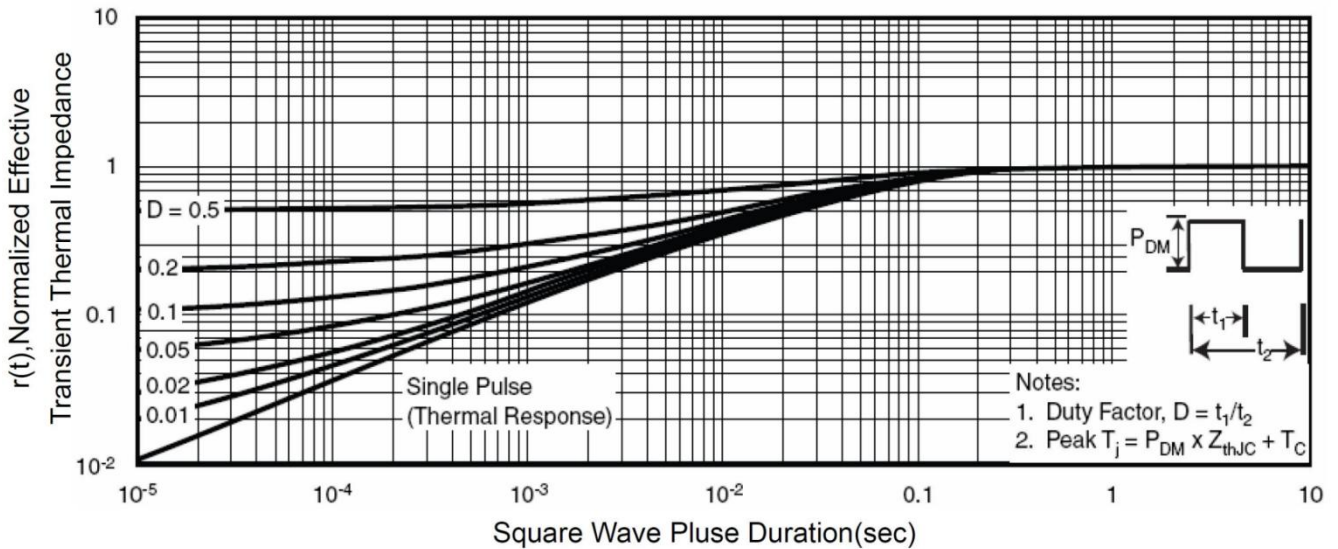
Drain Current vs Case Temperature



Safe Operation Area

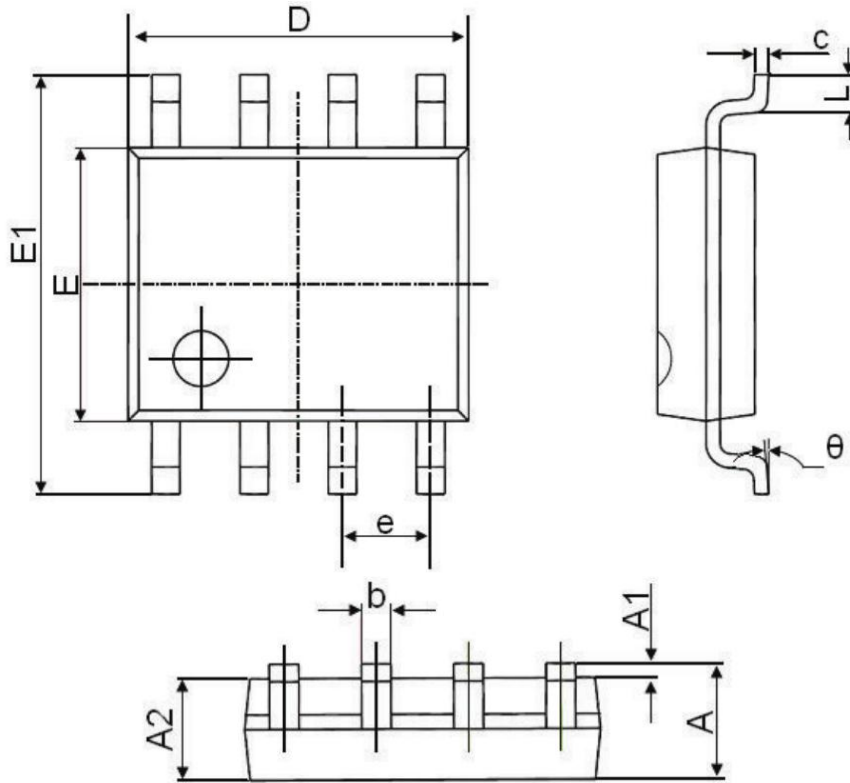


Power De-rating



Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.250	1.650	0.049	0.065
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(REF)		0.050(REF)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°