

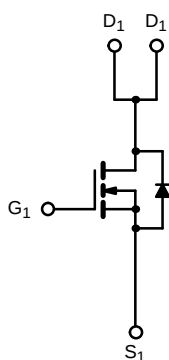
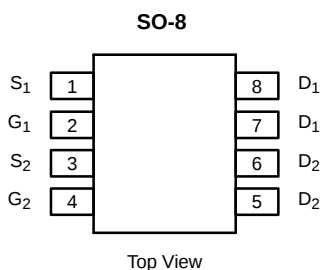


N-Channel 60-V (D-S), 175°C MOSFET

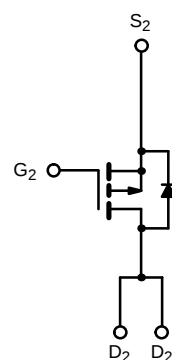
PRODUCT SUMMARY

	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	60	0.055 @ $V_{GS} = 10$ V	± 4.5
		0.075 @ $V_{GS} = 4.5$ V	± 3.9
P-Channel	-60	0.120 @ $V_{GS} = -10$ V	± 3.1
		0.150 @ $V_{GS} = -4.5$ V	± 2.8

175°C Rated
Maximum Junction Temperature
TrenchFET®
Power MOSFETs



N-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		V _{DS}	60	−60	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current (T _J = 175°C) ^a	T _A = 25°C	I _D	± 4.5	± 3.1	A
	T _A = 70°C		± 3.8	± 2.6	
Pulsed Drain Current		I _{DM}	± 30	± 30	
Continuous Source Current (Diode Conduction) ^a		I _S	2.0	−2.0	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.4		W
	T _A = 70°C		1.7		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 175		°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	N- or P- Channel	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	62.5	$^\circ\text{C/W}$

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)							
Parameter	Symbol	Test Condition		Min	Typ ^a	Max	Unit
Static							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	N-Ch	1			V
		V _{DS} = V _{GS} , I _D = -250 μA	P-Ch	-1			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V	N-Ch			±100	nA
			P-Ch			±100	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0 V	N-Ch			2	μA
		V _{DS} = -60 V, V _{GS} = 0 V	P-Ch			-2	
		V _{DS} = 60 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch			25	
		V _{DS} = -60 V, V _{GS} = 0 V, T _J = 55 °C	P-Ch			-25	
On-State Drain Current ^b	I _{D(on)}	V _{DS} ≥ 5 V, V _{GS} = 10 V	N-Ch	20			A
		V _{DS} ≤ -5 V, V _{GS} = -10 V	P-Ch	-20			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 4.5 A	N-Ch		0.045	0.055	Ω
		V _{GS} = -10 V, I _D = -3.1 A	P-Ch		0.100	0.120	
		V _{GS} = 4.5 V, I _D = 3.9 A	N-Ch		0.055	0.075	
		V _{GS} = -4.5 V, I _D = -2.8 A	P-Ch		0.125	0.150	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 4.5 A	N-Ch		13		S
		V _{DS} = -15 V, I _D = -3.1 A	P-Ch		7.5		
Diode Forward Voltage ^b	V _{SD}	I _S = 2.0 A, V _{GS} = 0 V	N-Ch		0.9	1.2	V
		I _S = -2.0 A, V _{GS} = 0 V	P-Ch		-0.8	-1.2	
Dynamic ^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 30 V, V _{GS} = 10 V, I _D = 4.5 A P-Channel V _{DS} = -30 V, V _{GS} = -10 V I _D = -3.1A	N-Ch		19	30	nC
Gate-Source Charge	Q _{gs}		P-Ch		16	25	
			N-Ch		4		
Gate-Drain Charge	Q _{gd}		P-Ch		4		
		N-Ch		3			
Turn-On Delay Time	t _{d(on)}		P-Ch		1.6		
			N-Ch		13	20	
Rise Time	t _r	N-Channel V _{DD} = 30 V, R _L = 30 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω	P-Ch		8	15	ns
			N-Ch		11	20	
Turn-Off Delay Time	t _{d(off)}	P-Channel V _{DD} = -30 V, R _L = 30 Ω I _D ≅ -1 A, V _{GEN} = -10 V, R _G = 6 Ω	P-Ch		10	20	
			N-Ch		36	60	
Fall Time	t _f		P-Ch		12	25	
			N-Ch		11	20	
Source-Drain Reverse Recovery Time	t _{rr}		P-Ch		35	50	
			N-Ch		35	60	
			P-Ch		60	90	
			N-Ch				

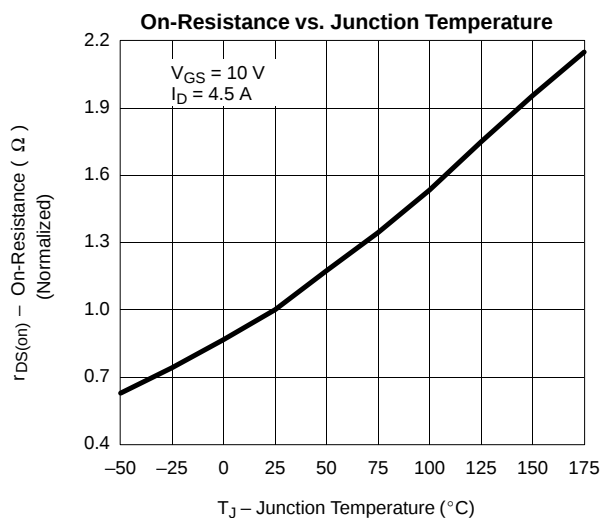
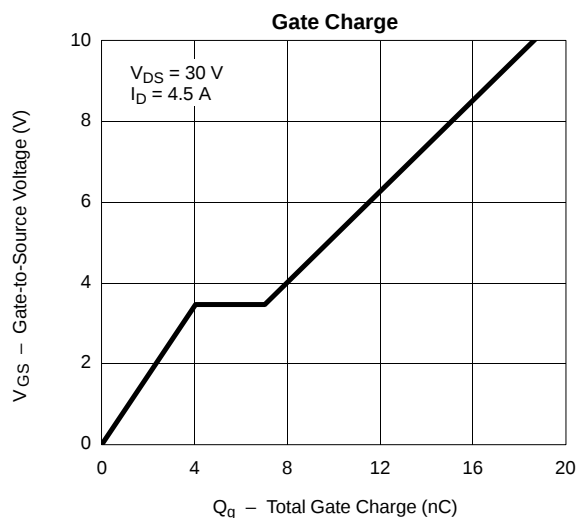
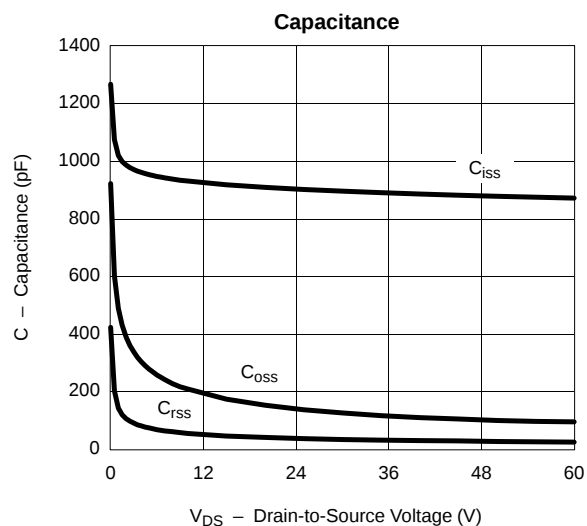
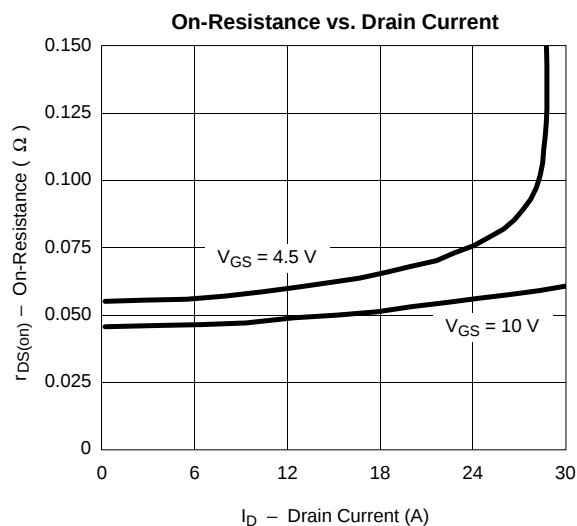
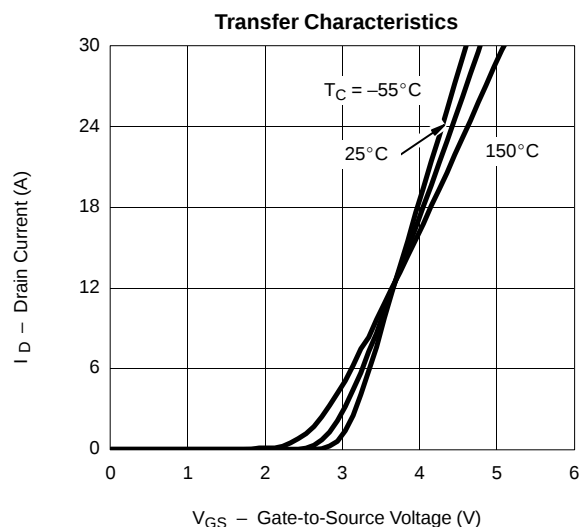
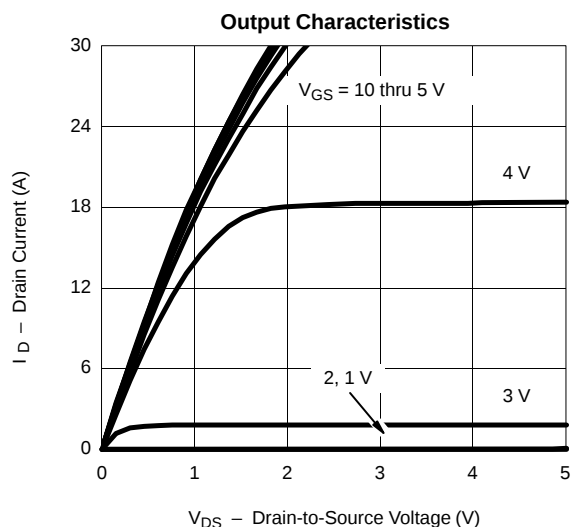
Notes

- a. Guaranteed by design, not subject to production testing.
b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



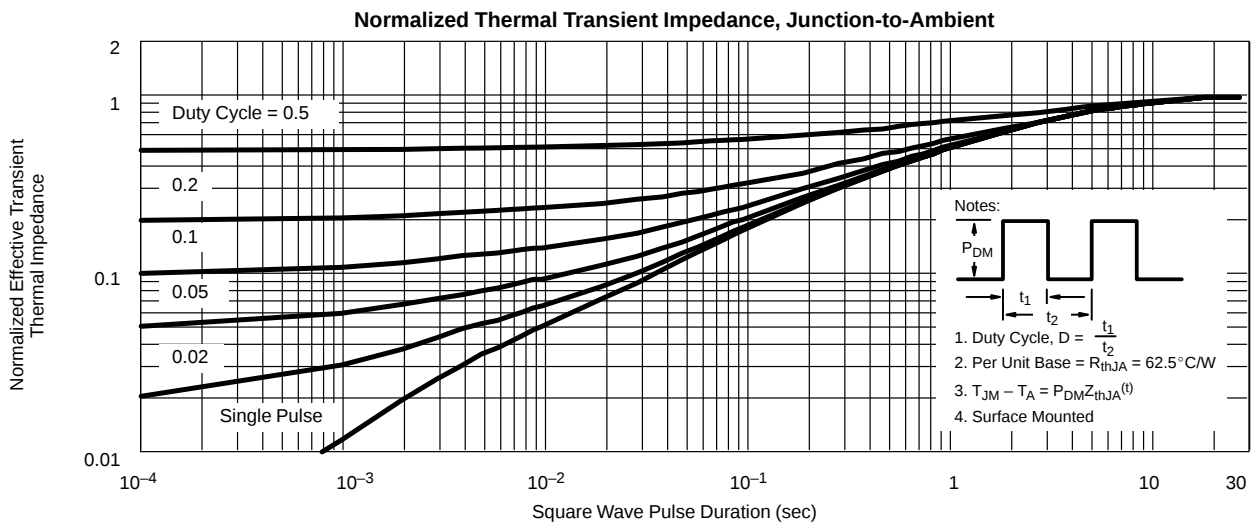
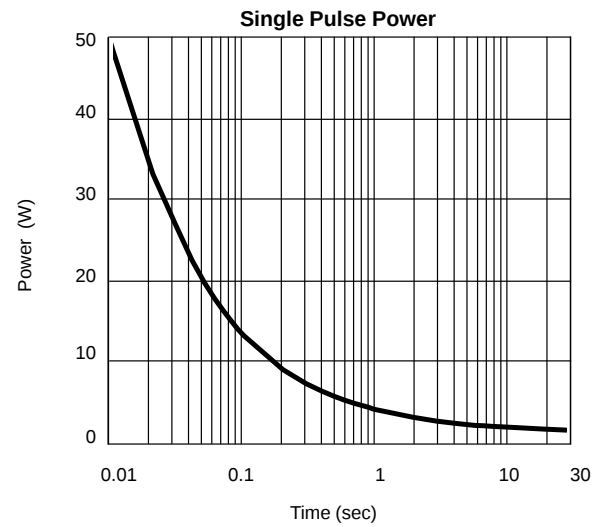
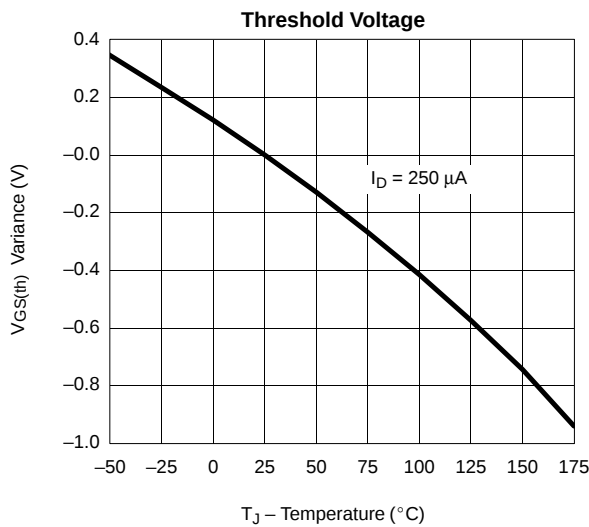
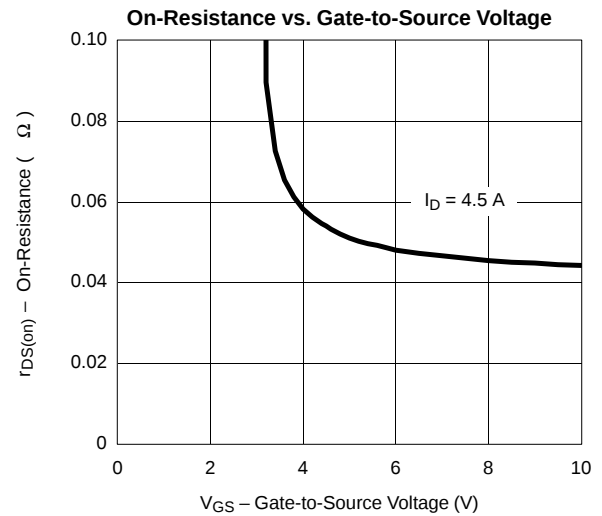
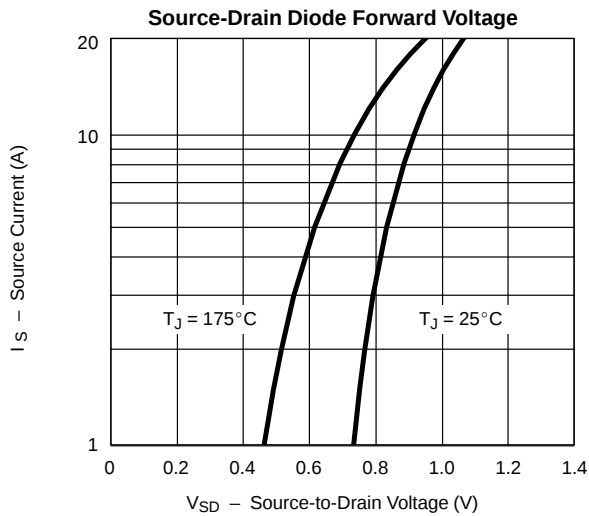
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



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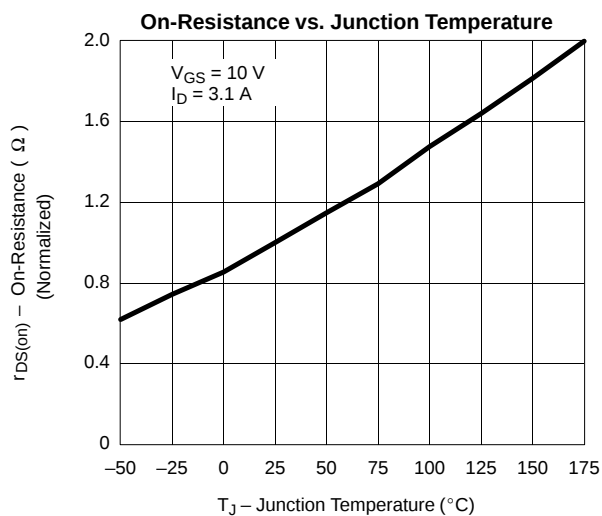
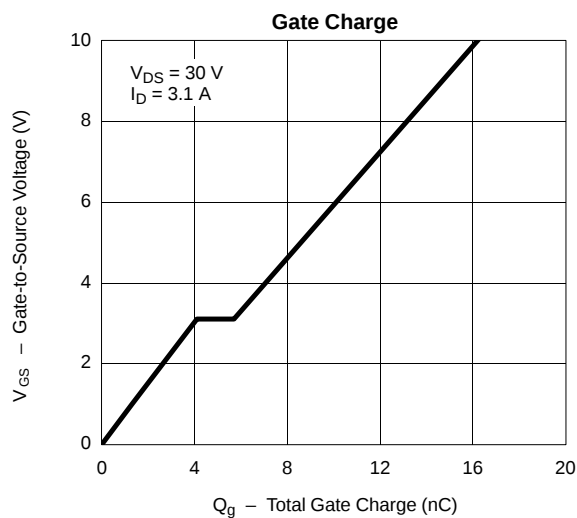
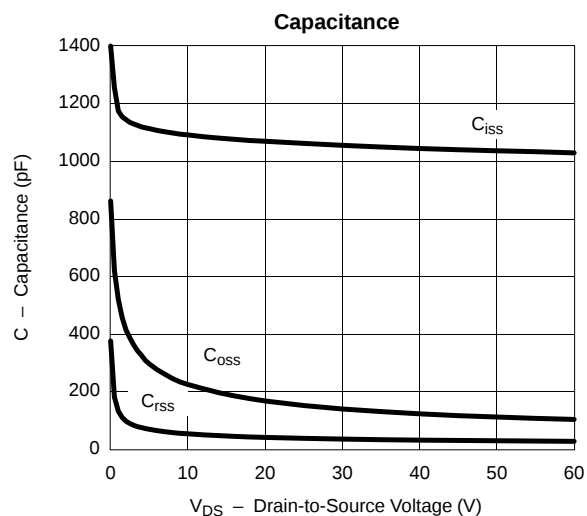
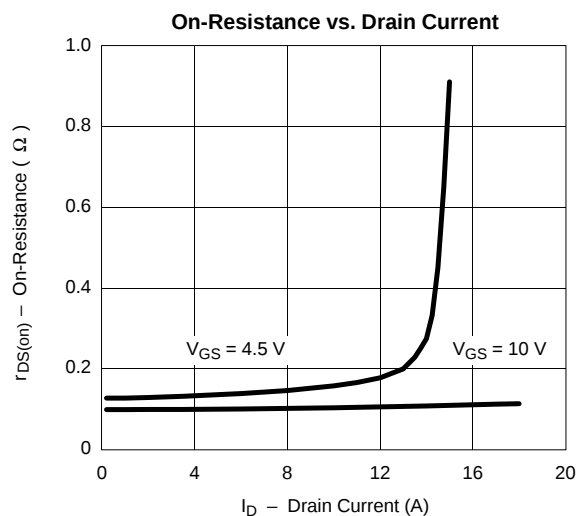
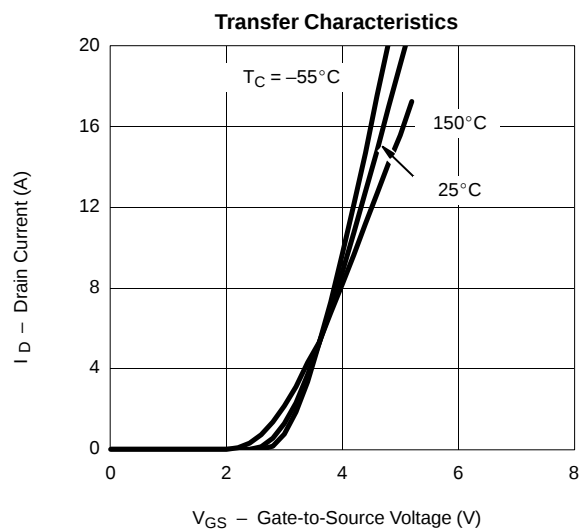
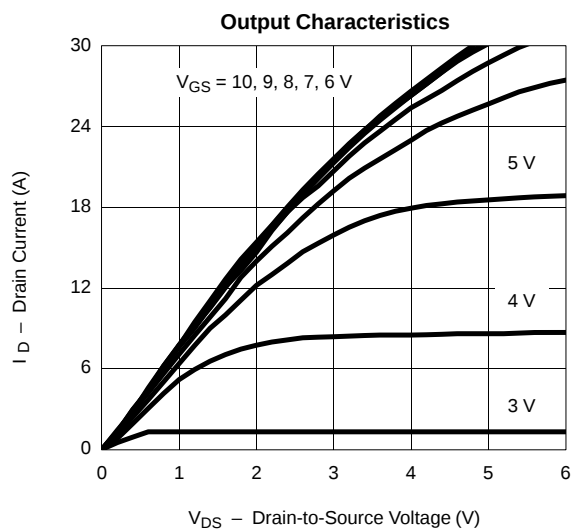
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

