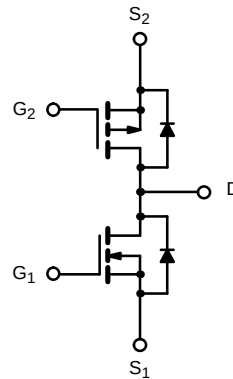
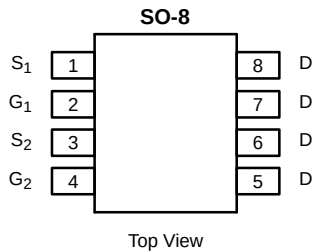




N- and P-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY

	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	30	0.040 @ $V_{GS} = 10$ V	± 6
		0.060 @ $V_{GS} = 4.5$ V	± 4.8
P-Channel	-30	0.040 @ $V_{GS} = -10$ V	± 6
		0.070 @ $V_{GS} = -4.5$ V	± 4.4



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

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage		V _{DS}	30	−30	V
Gate-Source Voltage		V _{GS}	± 20	± 20	
Continuous Drain Current (T _J = 150°C) ^a	T _A = 25°C	I _D	± 6	± 6	A
	T _A = 70°C		± 4.7	± 4.7	
Pulsed Drain Current		I _{DM}	± 30	± 30	
Continuous Source Current (Diode Conduction) ^a		I _S	2	−2	
Maximum Power Dissipation ^a	T _A = 25°C	P _D	2.4		W
	T _A = 70°C		1.5		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	−55 to 150		°C

THERMAL RESISTANCE RATINGS

Parameter	Symbol	N- or P- Channel	Unit
Maximum Junction-to-Ambient ^a	R_{thJA}	52	$^\circ\text{C/W}$

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	1.0			V
		V _{DS} = V _{GS} , I _D = −250 μA	P-Ch	−1.0			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V				± 100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V	N-Ch			1	μA
		V _{DS} = −30 V, V _{GS} = 0 V	P-Ch			−1	
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 70 °C	N-Ch			5	
		V _{DS} = −24 V, V _{GS} = 0 V, T _J = 70 °C	P-Ch			−5	
On-State Drain Current ^b	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N-Ch	30			A
		V _{DS} = −5 V, V _{GS} = −10 V	P-Ch	−30			
		V _{DS} = 5 V, V _{GS} = 4.5 V	N-Ch	8.0			
		V _{DS} = −5 V, V _{GS} = −4.5 V	P-Ch	−8.0			
Drain-Source On-State Resistance ^b	r _{DS(on)}	V _{GS} = 10 V, I _D = 6 A	N-Ch		0.032	0.040	Ω
		V _{GS} = −10 V, I _D = −6 A	P-Ch		0.032	0.040	
		V _{GS} = 4.5 V, I _D = 4.8 A	N-Ch		0.045	0.060	
		V _{GS} = −4.5 V, I _D = −4.4 A	P-Ch		0.056	0.070	
Forward Transconductance ^b	g _{fs}	V _{DS} = 15 V, I _D = 6 A	N-Ch		13		S
		V _{DS} = −15 V, I _D = −6 A	P-Ch		10.6		
Diode Forward Voltage ^b	V _{SD}	I _S = 2 A, V _{GS} = 0 V	N-Ch		0.77	1.2	V
		I _S = −2 A, V _{GS} = 0 V	P-Ch		0.77	−1.2	
Dynamic ^a							
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 10 V, I _D = 6 A P-Channel V _{DS} = −15 V, V _{GS} = −10 V I _D = −6 A	N-Ch		16	30	nC
Gate-Source Charge	Q _{gs}		P-Ch		22	35	
			N-Ch		3.4		
Gate-Drain Charge	Q _{gd}	P-Ch		5.4			
		N-Ch		2.3			
Turn-On Delay Time	t _{d(on)}	P-Ch		3.6			
		N-Channel V _{DD} = 15 V, R _L = 15 Ω I _D ≅ 1 A, V _{GEN} = 10 V, R _G = 6 Ω P-Channel V _{DD} = −15 V, R _L = 15 Ω I _D ≅ −1 A, V _{GEN} = −10 V, R _G = 6 Ω	N-Ch		12	25	ns
P-Ch			12	25			
Rise Time	t _r		N-Ch		12	25	
			P-Ch		12	25	
Turn-Off Delay Time	t _{d(off)}		N-Ch		27	55	
			P-Ch		38	55	
Fall Time	t _f	N-Ch		24	50		
		P-Ch		25	50		
Source-Drain Reverse Recovery Time	t _{rr}	I _F = 2 A, di/dt = 100 A/μs	N-Ch		45	80	
		I _F = −2 A, di/dt = 100 A/μs	P-Ch		50	80	

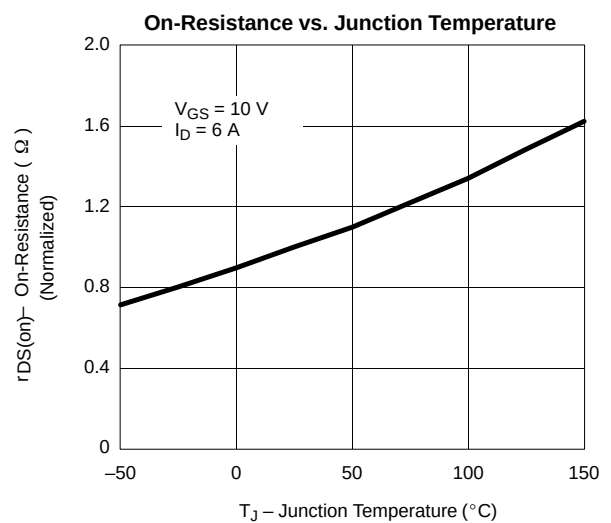
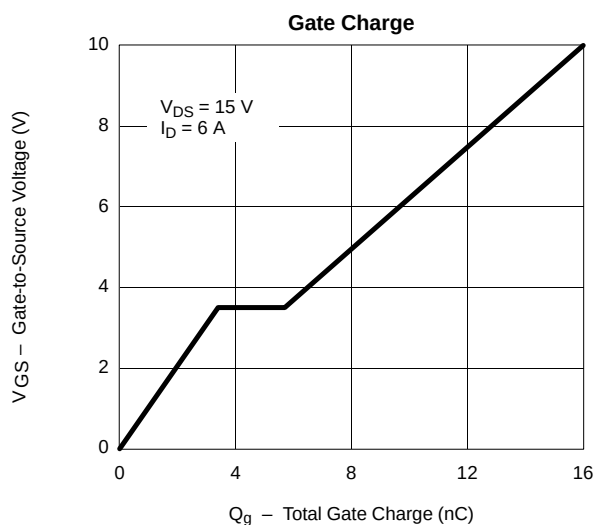
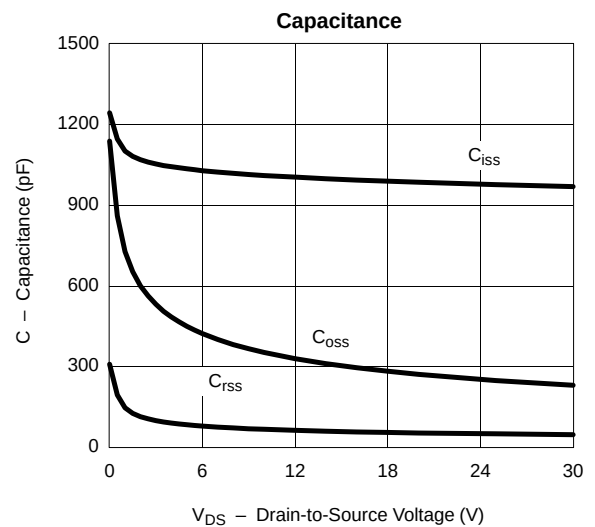
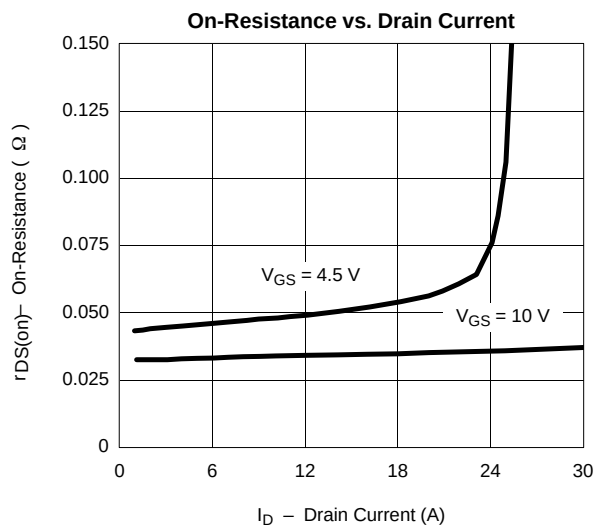
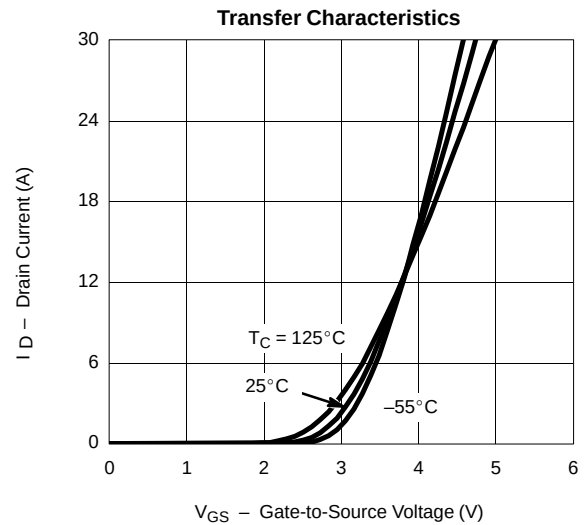
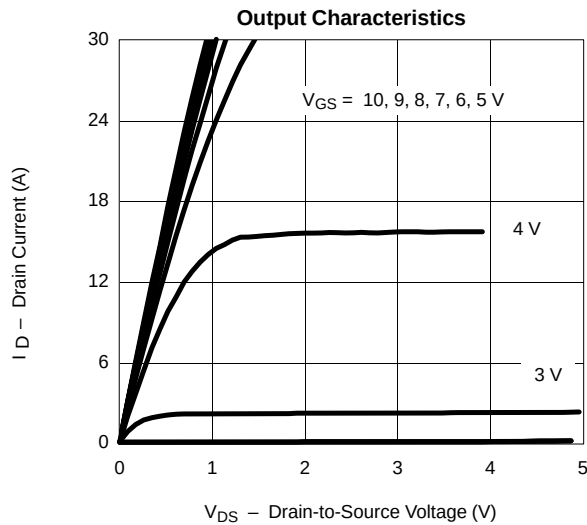
Notes

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



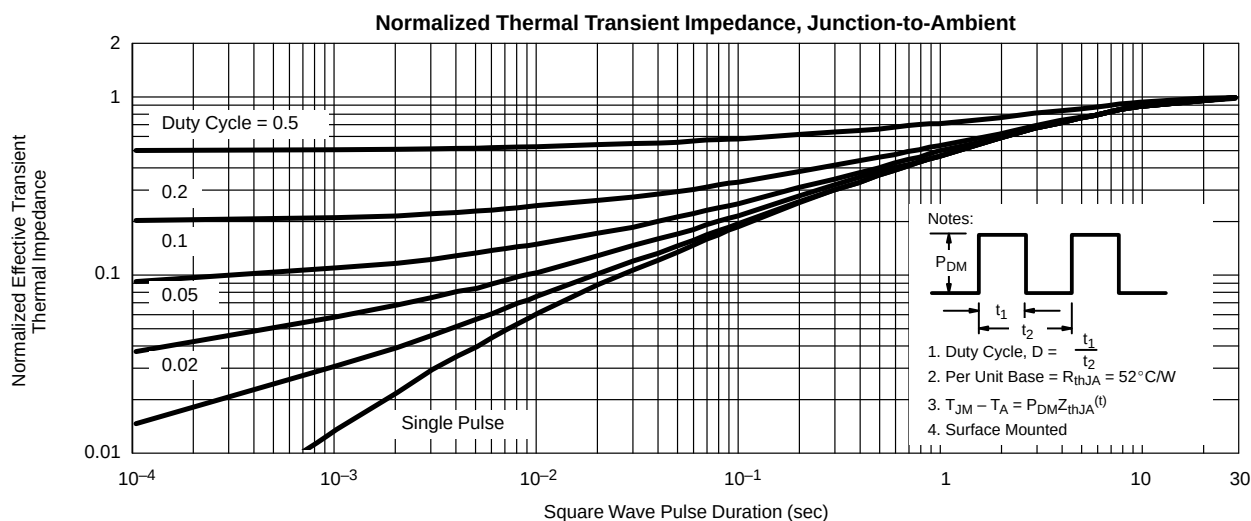
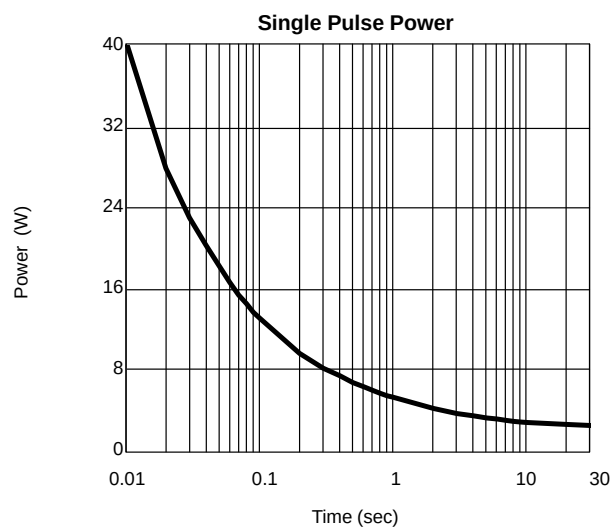
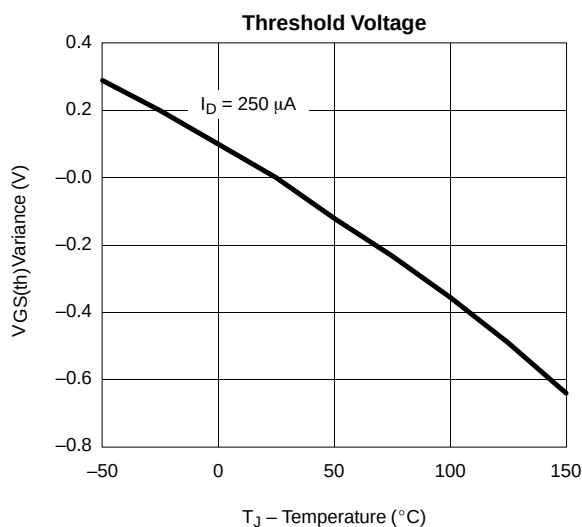
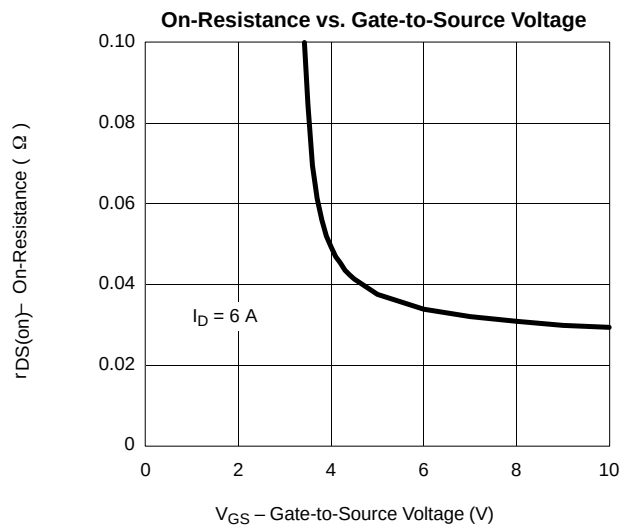
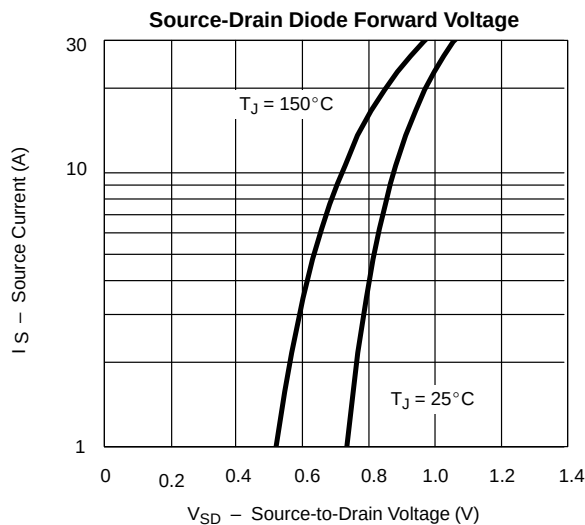
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

N-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

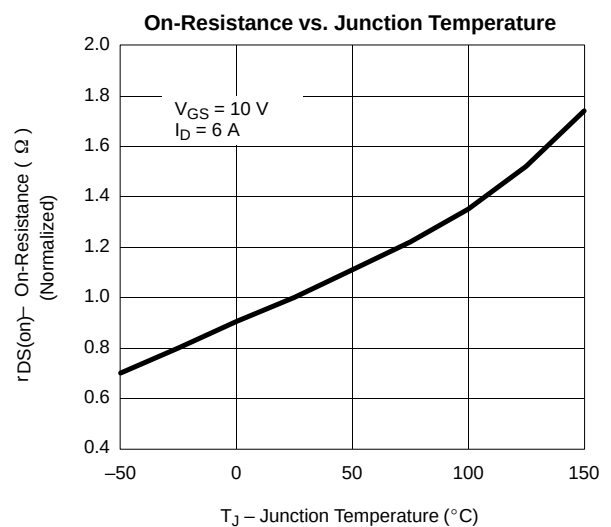
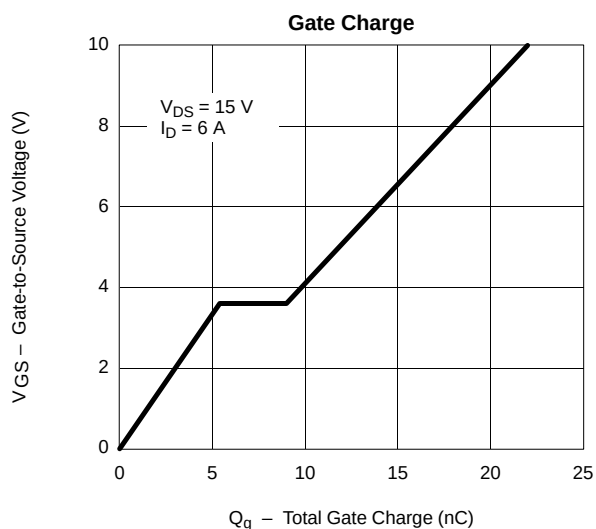
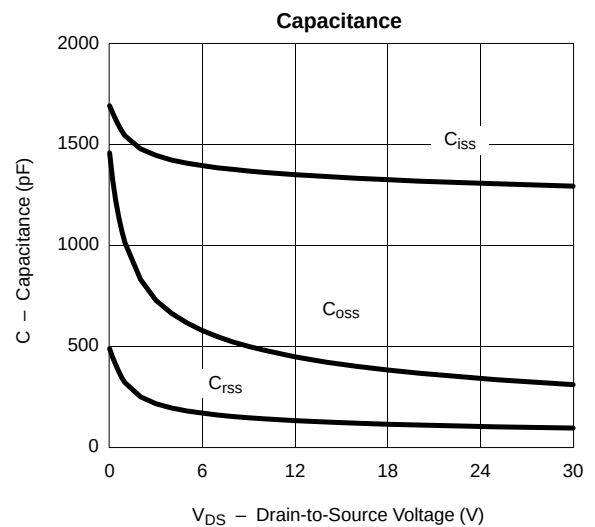
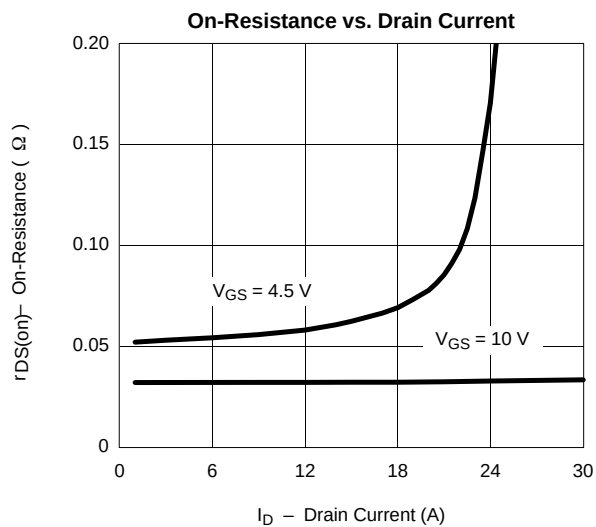
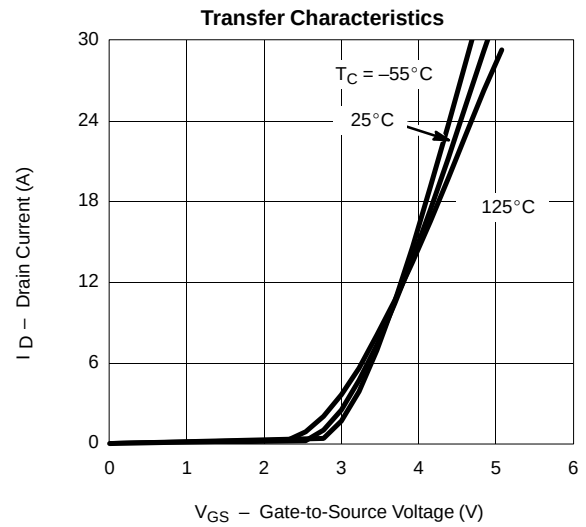
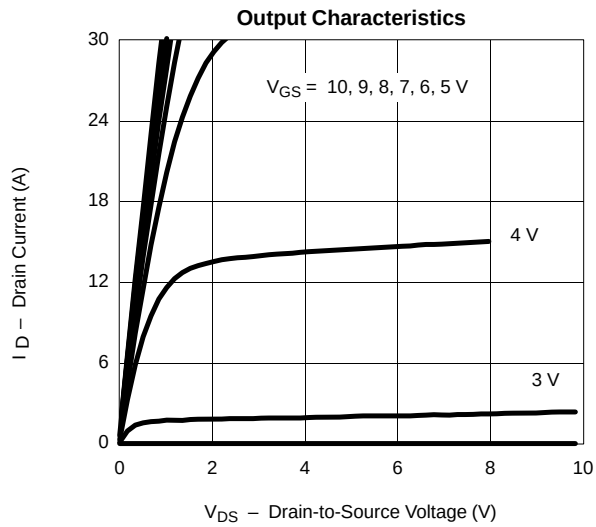
N-CHANNEL





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

P-CHANNEL

