

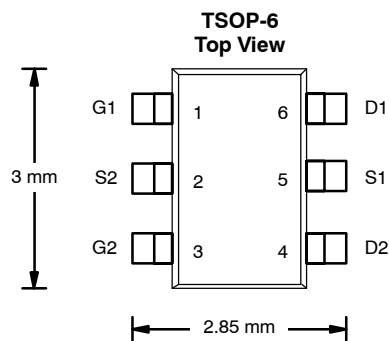


N- and P-Channel 30-V (D-S) MOSFET

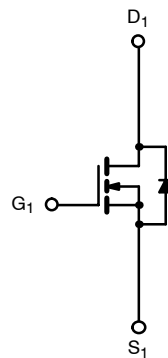
PRODUCT SUMMARY			
	V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
N-Channel	30	0.105 @ $V_{GS} = 10$ V	2.5
		0.175 @ $V_{GS} = 4.5$ V	2.0
P-Channel	-30	0.200 @ $V_{GS} = -10$ V	-1.8
		0.360 @ $V_{GS} = -4.5$ V	-1.2

FEATURES

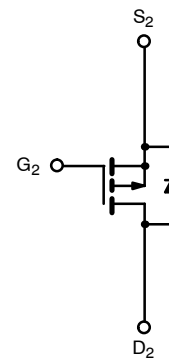
- TrenchFET® Power MOSFET
- 100% R_g Tested



Ordering Information: Si3552DV-T1



N-Channel MOSFET



P-Channel MOSFET

ABSOLUTE MAXIMUM RATINGS (T _A = 25°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, b}	T _A = 25°C	I _D	2.5	-1.8	A
	T _A = 70°C		2.0	-1.2	
Pulsed Drain Current		I _{DM}	8	-7	
Continuous Source Current (Diode Conduction) ^{a, b}		I _S	1.05	-1.05	
Maximum Power Dissipation ^{a, b}	T _A = 25°C	P _D	1.15		W
	T _A = 70°C		0.73		
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	93	110	$^\circ\text{C/W}$
	Steady State		130	150	
Maximum Junction-to-Lead	Steady State	R_{thJL}	75	90	

Notes

- a. Surface Mounted on FR4 Board.
b. $t \leq 5$ sec

SPECIFICATIONS (T _J = 25 °C UNLESS OTHERWISE NOTED)									
Parameter	Symbol	Test Condition		Min	Typ	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	N-Ch P-Ch			±100 ±100	nA		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24 V, V _{GS} = 0 V	N-Ch			1	μA		
		V _{DS} = -24 V, V _{GS} = 0 V	P-Ch			-1			
		V _{DS} = 24 V, V _{GS} = 0 V, T _J = 55 °C	N-Ch			5			
		V _{DS} = -24 V, V _{GS} = 0 V, T _J = 55 °C	P-Ch			-5			
On-State Drain Current ^a	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	N-Ch	5			A		
		V _{DS} = -5 V, V _{GS} = -10 V	P-Ch	-5					
Drain-Source On-State Resistance ^a	r _{DS(on)}	V _{GS} = 10 V, I _D = 2.5 A	N-Ch		0.085	0.105	Ω		
		V _{GS} = -10 V, I _D = -1.8 A	P-Ch		0.165	0.200			
		V _{GS} = 4.5 V, I _D = 2.0 A	N-Ch		0.140	0.175			
		V _{GS} = -4.5 V, I _D = -1.2 A	P-Ch		0.298	0.360			
Forward Transconductance ^a	g _{fs}	V _{DS} = 10 V, I _D = 2.5 A	N-Ch		4.3		S		
		V _{DS} = -15 V, I _D = -1.8 A	P-Ch		2.4				
Diode Forward Voltage ^a	V _{SD}	I _S = 1.05 A, V _{GS} = 0 V	N-Ch		0.81	1.10	V		
		I _S = -1.05 A, V _{GS} = 0 V	P-Ch		-0.83	-1.10			
Dynamic ^b									
Total Gate Charge	Q _g	N-Channel V _{DS} = 15 V, V _{GS} = 5 V, I _D = 1.8 A P-Channel V _{DS} = -15 V, V _{GS} = -5 V, I _D = -1.8 A	N-Ch		2.1	3.2	nC		
			P-Ch		2.4	3.6			
Gate-Source Charge	Q _{gs}		N-Ch		0.7				
			P-Ch		0.9				
Gate-Drain Charge	Q _{gd}		N-Ch		0.7				
			P-Ch		0.8				
Gate Resistance	R _g		N-Ch P-Ch	0.5 3		2.4 11	Ω		
Turn-On Delay Time	t _{d(on)}	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 P-Ch		7 8	11 12	ns		
Rise Time	t _r		N-Ch P-Ch		9 12	14 18			
Turn-Off Delay Time	t _{d(off)}		N-Ch P-Ch		13 12	20 18			
Fall Time	t _f		N-Ch P-Ch		5 7	8 11			
Source-Drain Reverse Recovery Time	t _{rr}		I _F = 1.05 A, di/dt = 100 A/μs	N-Ch		35		60	
			I _F = -1.05 A, di/dt = 100 A/μs	P-Ch		30		60	

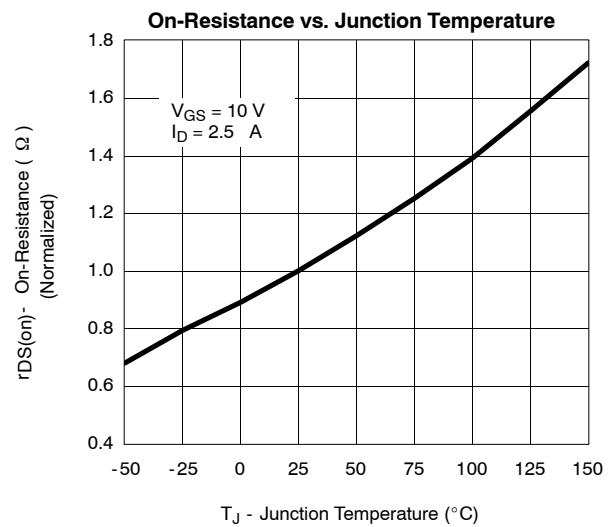
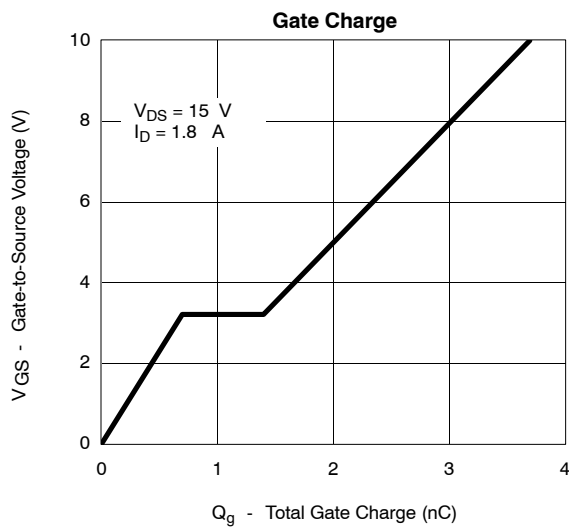
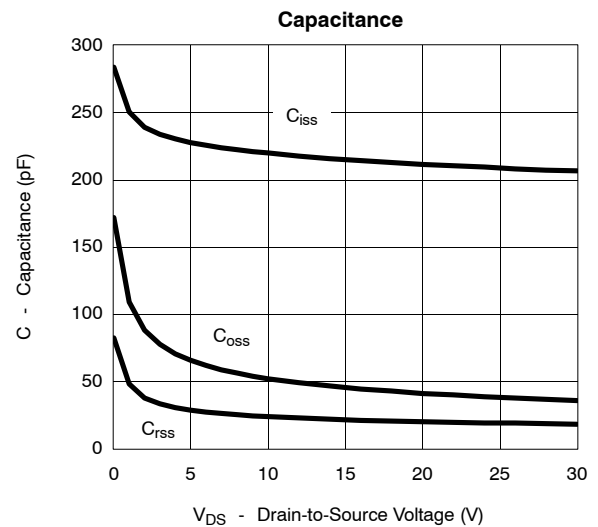
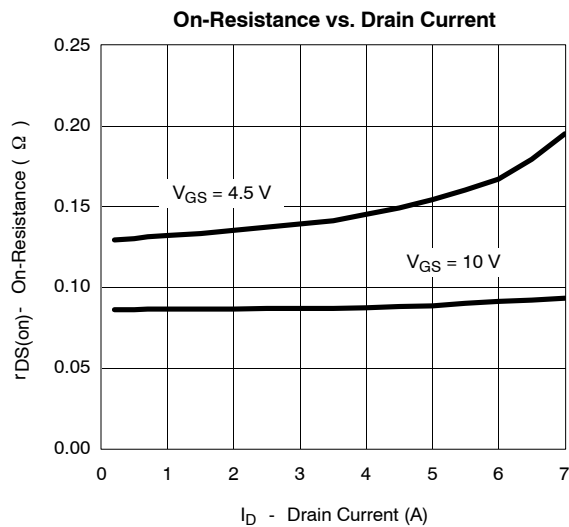
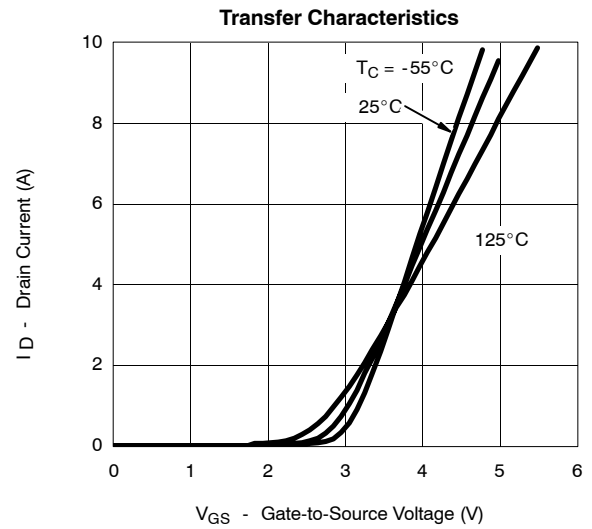
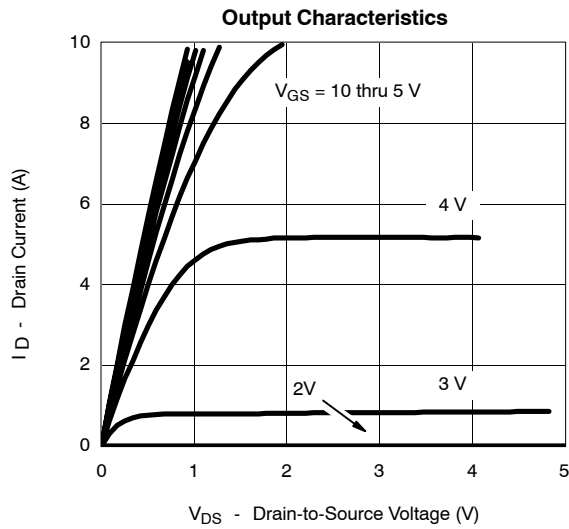
Notes

- a. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.



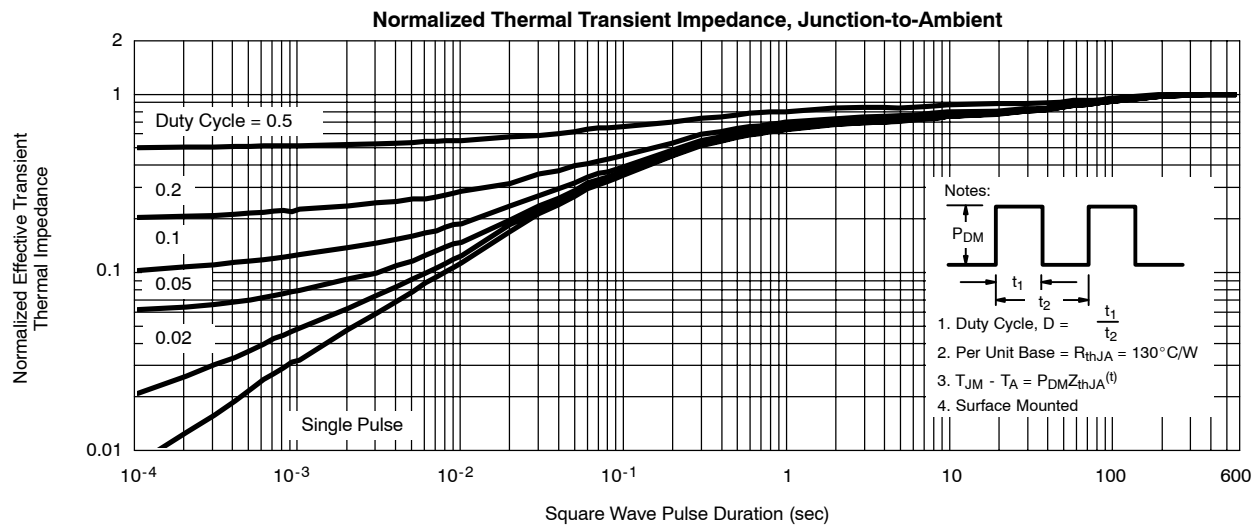
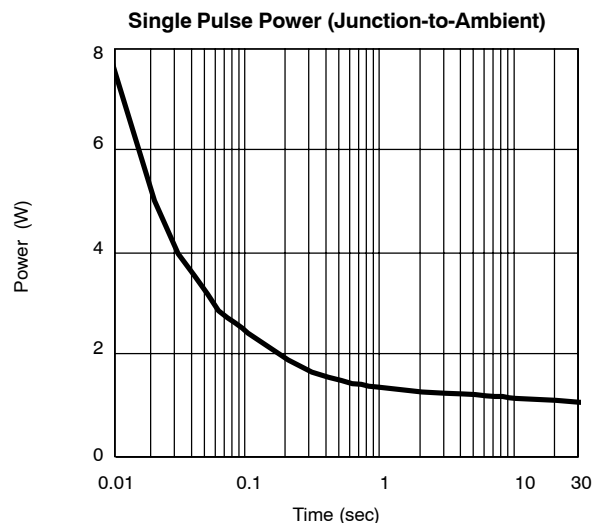
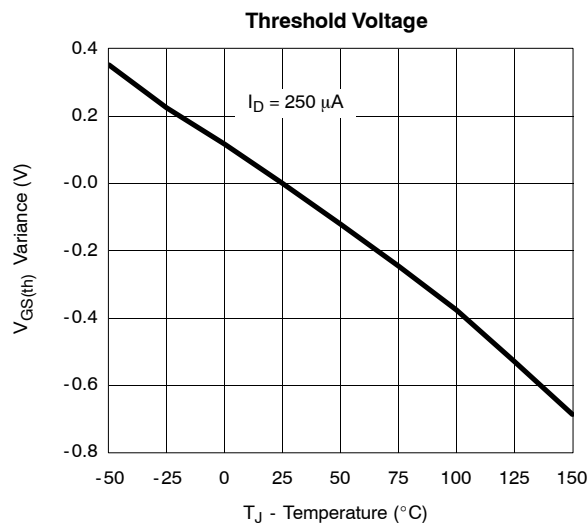
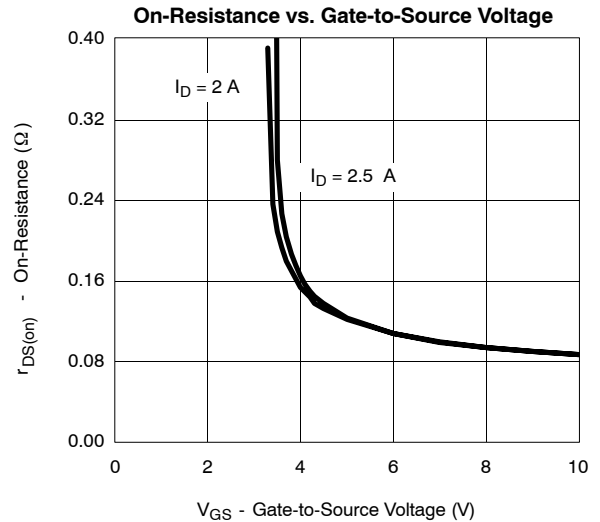
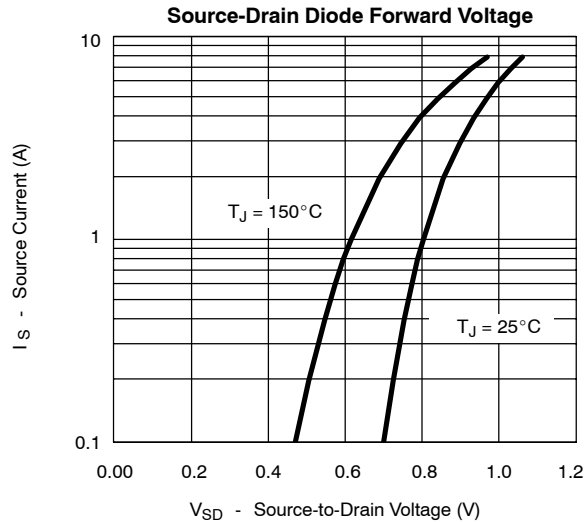
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

NCHANNEL



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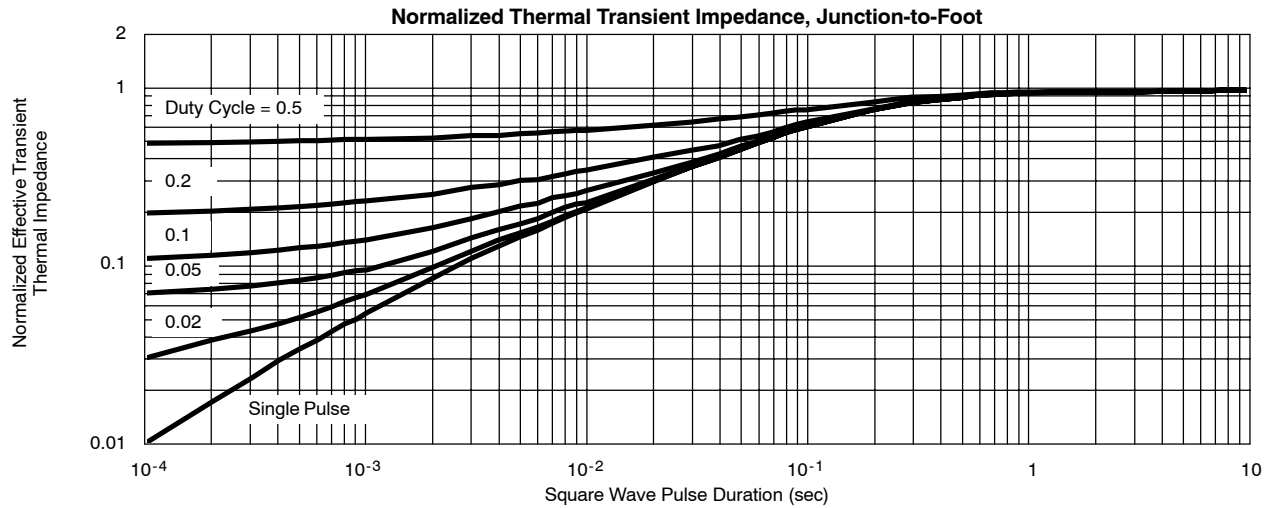
NCHANNEL





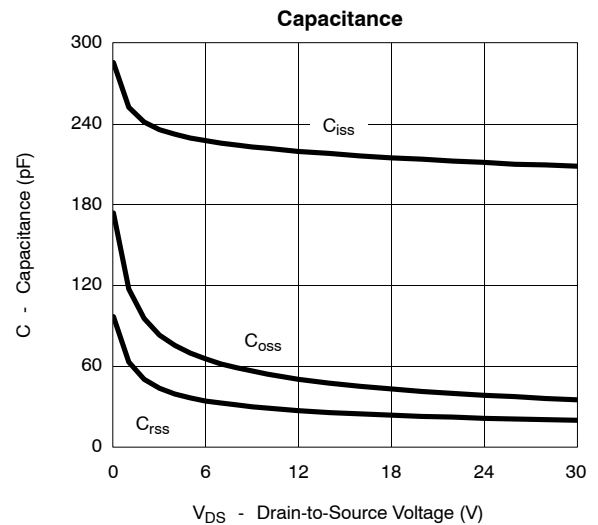
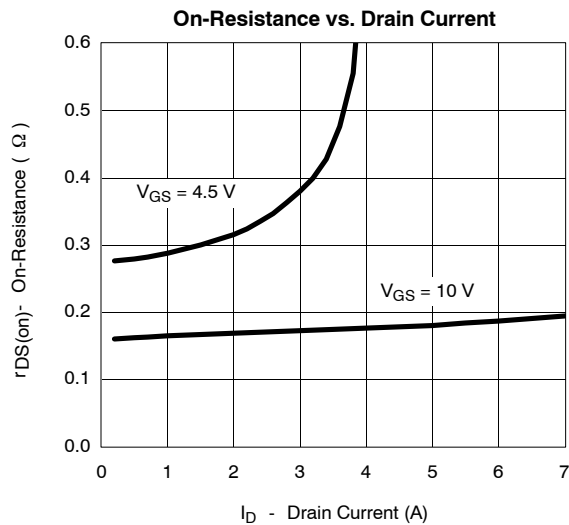
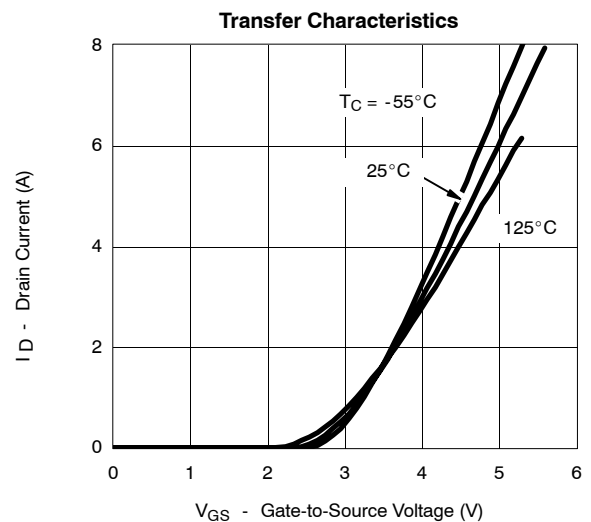
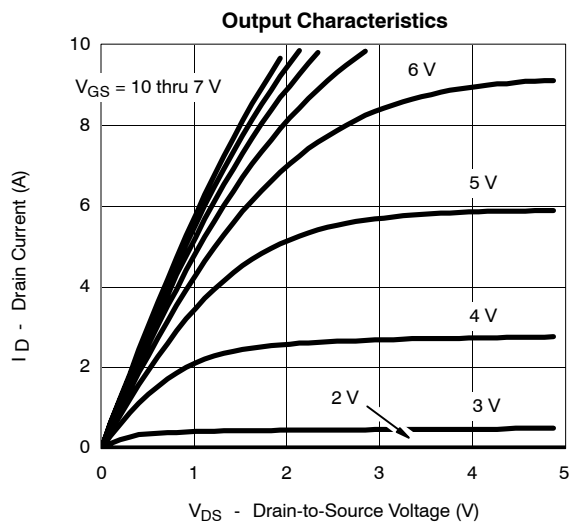
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NCHANNEL



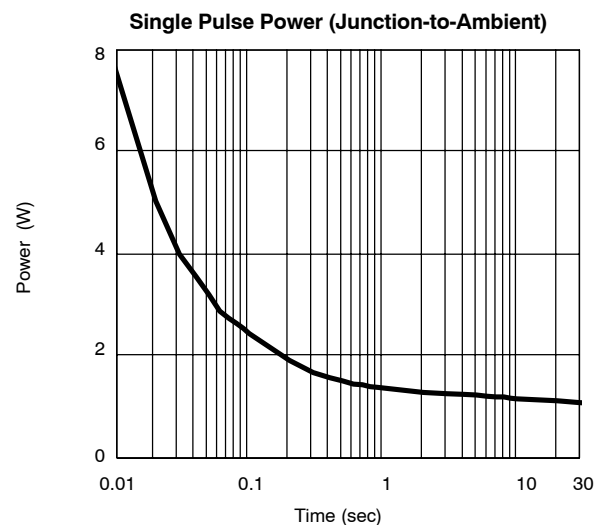
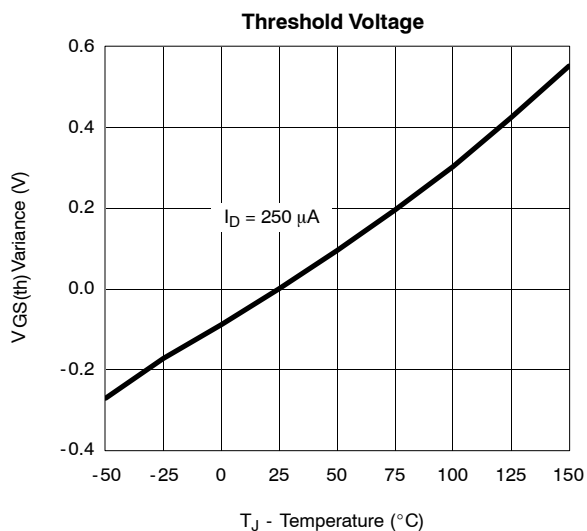
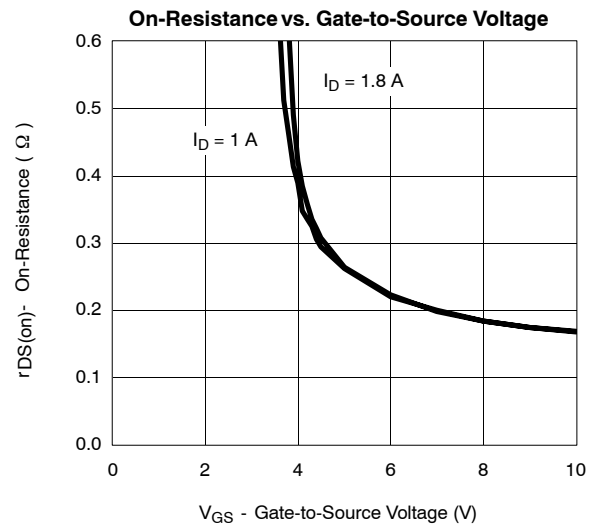
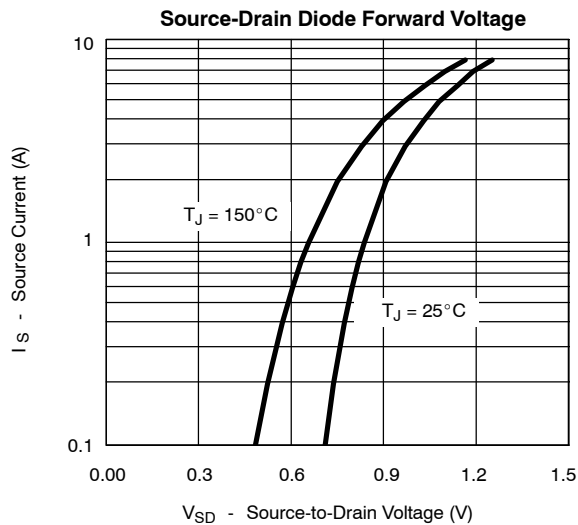
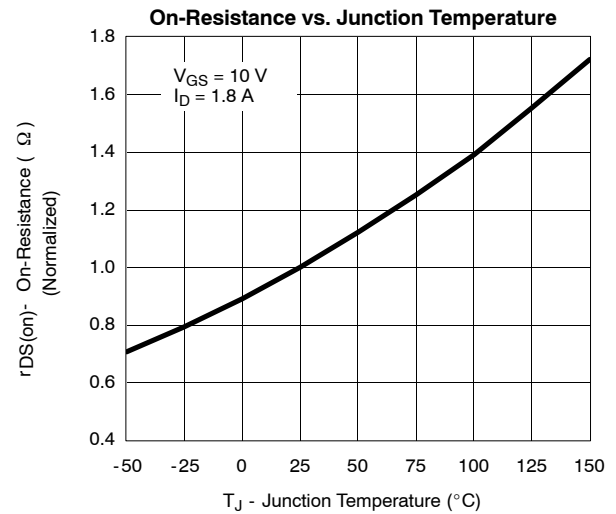
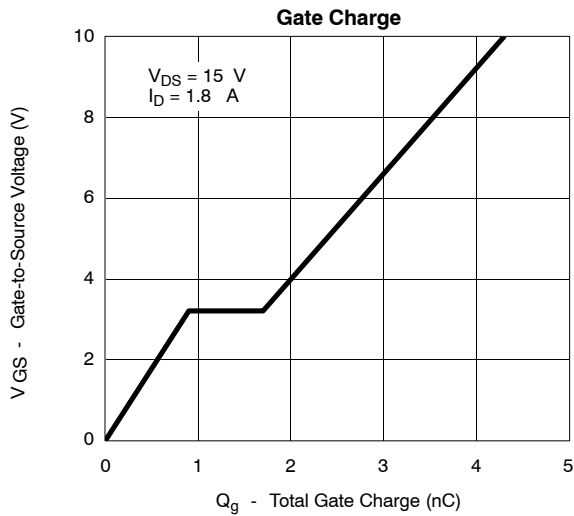
TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

PCHANNEL



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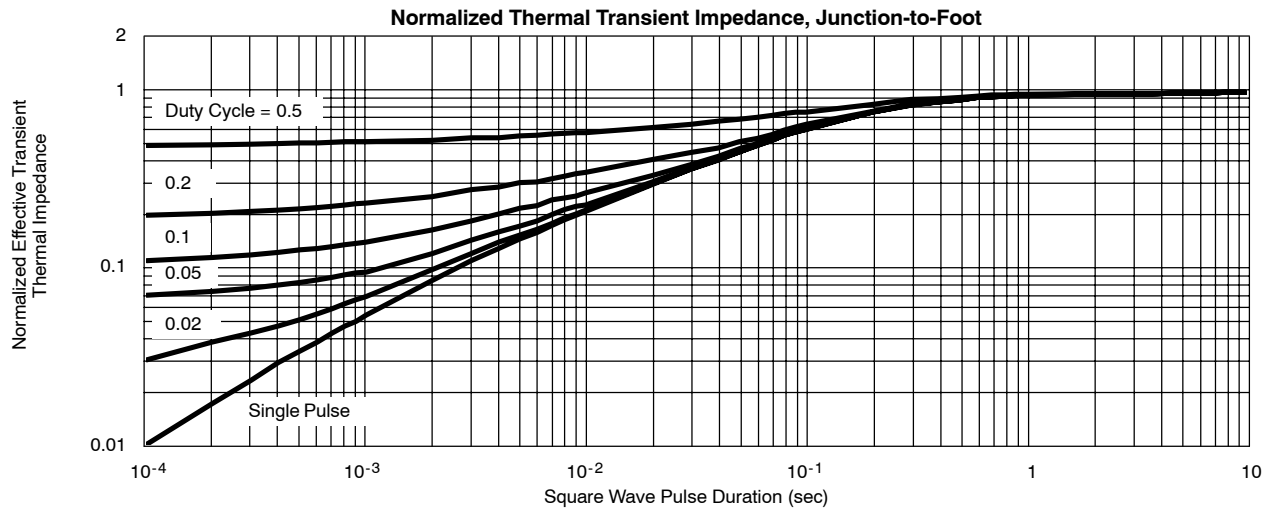
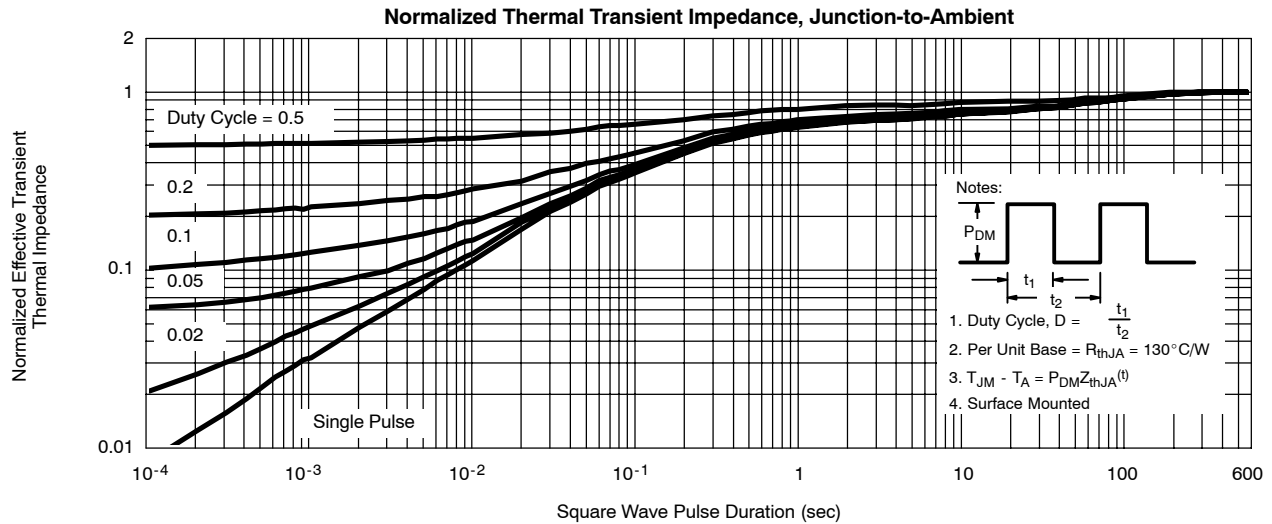
PCHANNEL





TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

PCHANNEL





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