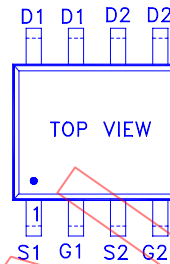
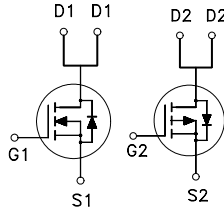


PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
N-Channel	30	55m	5A
P-Channel	-30	45m	-5A



G : GATE
D : DRAIN
S : SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	N-Channel	P-Channel	UNITS
Drain-Source Voltage		V_{DS}	30	-30	V
Gate-Source Voltage		V_{GS}	± 20	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	5	-5	A
	$T_C = 70\text{ }^\circ\text{C}$		4	-4	
Pulsed Drain Current ¹		I_{DM}	20	-20	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	2		W
	$T_C = 70\text{ }^\circ\text{C}$		1.3		
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	N-Ch	30		V	
		$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$	P-Ch	-30			
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	N-Ch	1	1.5		2.5
		$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	P-Ch	-1	-1.5		-2.5
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	N-Ch			± 100	
		$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$	P-Ch			± 100	

Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$	N-Ch		1	μA	
		$V_{DS} = -24V, V_{GS} = 0V$	P-Ch		-1		
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$	N-Ch		10		
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 55^\circ C$	P-Ch		-10		
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	N-Ch	20		A	
		$V_{DS} = -5V, V_{GS} = -10V$	P-Ch	-20			
Drain-Source Resistance ¹	On-State $R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 4A$	N-Ch		72	95	m
		$V_{GS} = -4.5V, I_D = -4A$	P-Ch		62	80	
		$V_{GS} = 10V, I_D = 5A$	N-Ch		45.5	55	
		$V_{GS} = -10V, I_D = -5A$	P-Ch		37.5	45	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 5A$	N-Ch		16		S
		$V_{DS} = -5V, I_D = -5A$	P-Ch		13		

DYNAMIC							
Input Capacitance	C_{iss}		N-Ch		310		pF
			P-Ch		780		
Output Capacitance	C_{oss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	N-Ch		95		pF
			P-Ch		145		
Reverse Transfer Capacitance	C_{rss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$	N-Ch		55		pF
			P-Ch		79		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5 \cdot V_{(BR)DSS}, V_{GS} = 10V, I_D = 5A$	N-Ch		8.5		nC
			P-Ch		15.1		
Gate-Source Charge ²	Q_{gs}	$V_{DS} = 0.5 \cdot V_{(BR)DSS}, V_{GS} = -10V, I_D = -4A$	N-Ch		1.6		nC
			P-Ch		2.1		
Gate-Drain Charge ²	Q_{gd}	$V_{DS} = 0.5 \cdot V_{(BR)DSS}, V_{GS} = -10V, I_D = -4A$	N-Ch		2.3		nC
			P-Ch		4.0		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 15V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 3$	N-Ch		7	11	nS
			P-Ch		7.7	11.5	
Rise Time ²	t_r	$V_{DD} = 15V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 3$	N-Ch		12	18	nS
			P-Ch		5.7	8.5	
Turn-Off Delay Time ²	$t_{d(off)}$	$V_{DD} = 15V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 3$	N-Ch		12	18	nS
			P-Ch		20	30	

Fall Time ²	t _f	V _{DD} = -15V	N-Ch	7	11	
		I _D ≅ -1A, V _{GS} = -10V, R _{GEN} = 3	P-Ch	9.5	14	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_c = 25 °C)						
Continuous Current	I _S		N-Ch		1.3	A
			P-Ch		-1.3	
Pulsed Current ³	I _{SM}		N-Ch		2.6	A
			P-Ch		-2.6	
Forward Voltage ¹	V _{SD}	I _F = 1A, V _{GS} = 0V	N-Ch		1	V
		I _F = -1A, V _{GS} = 0V	P-Ch		-1	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

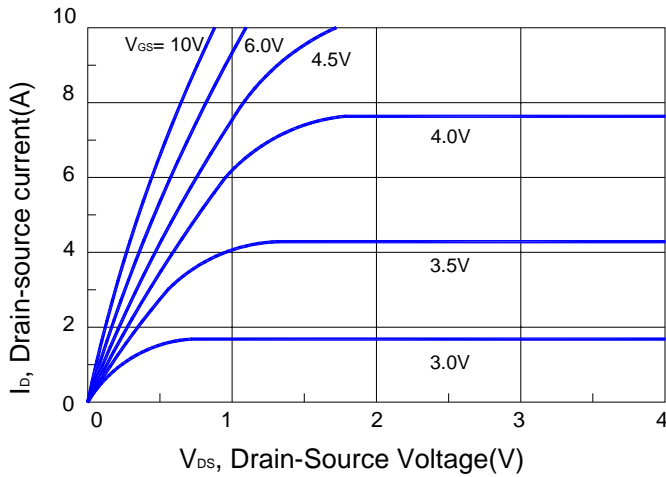
REMARK: THE PRODUCT MARKED WITH "P5503NVG", DATE CODE or LOT #

Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.

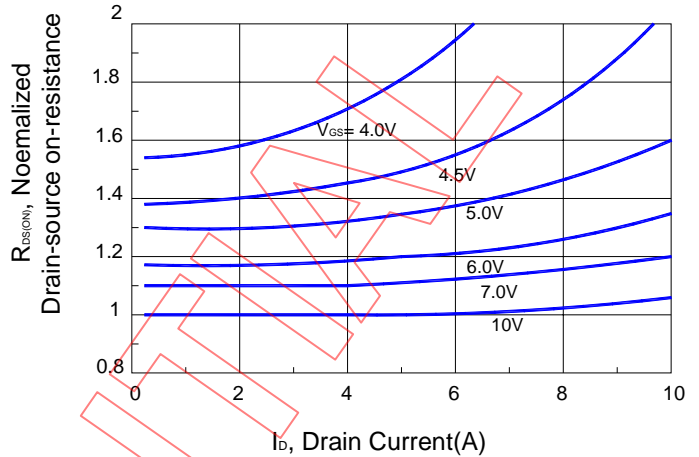
CONFIDENTIAL

N-CHANNEL

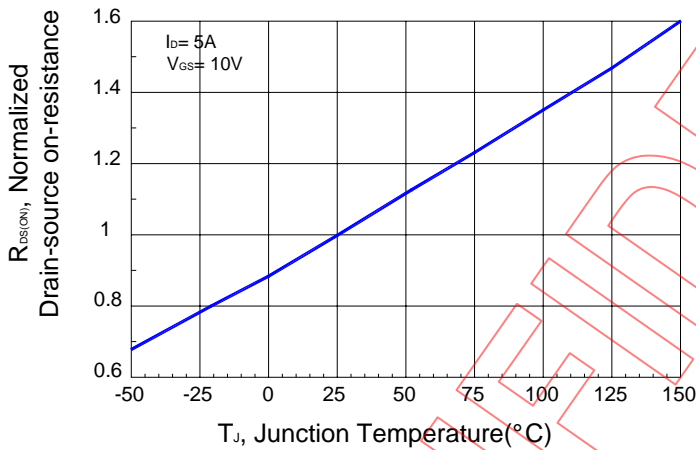
On-Region Characteristics.



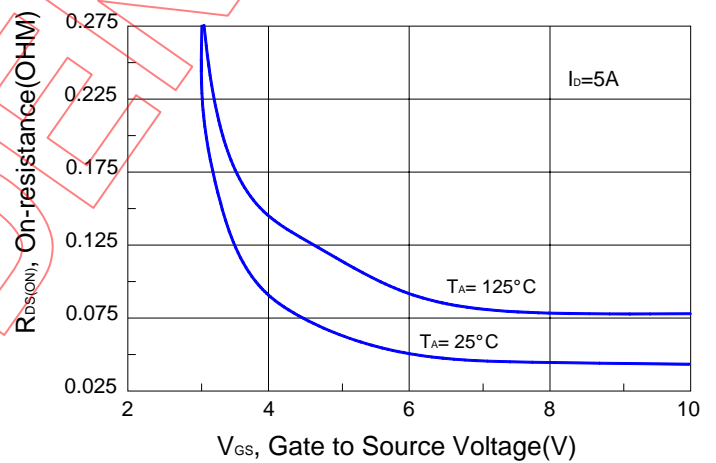
On-Resistance Variation with Drain Current and Gate Voltage.



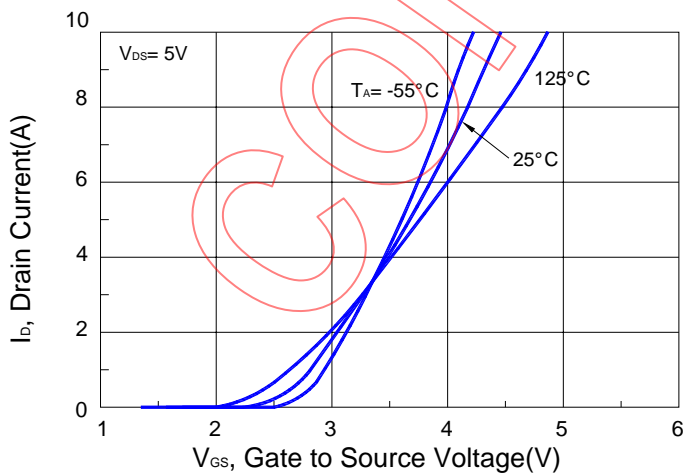
On-Resistance Variation with Temperature.



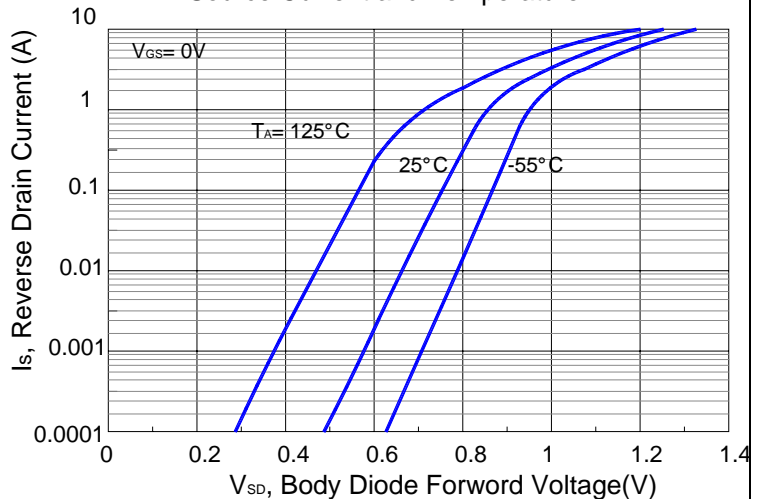
On-Resistance Variation with Gate-to-Source Voltage.



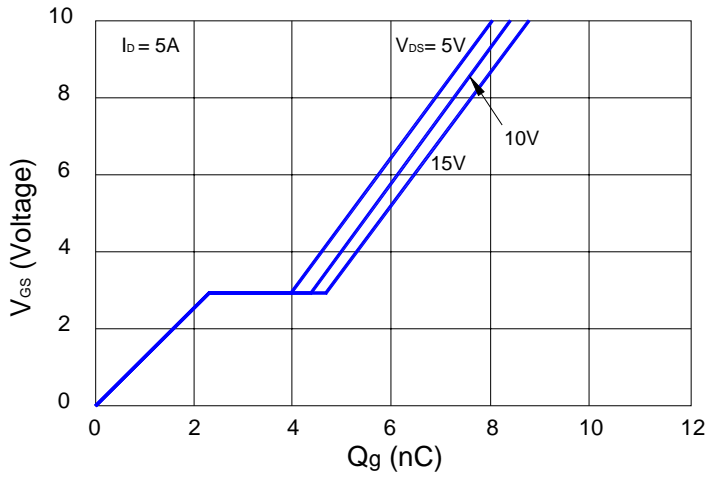
Transfer Characteristics.



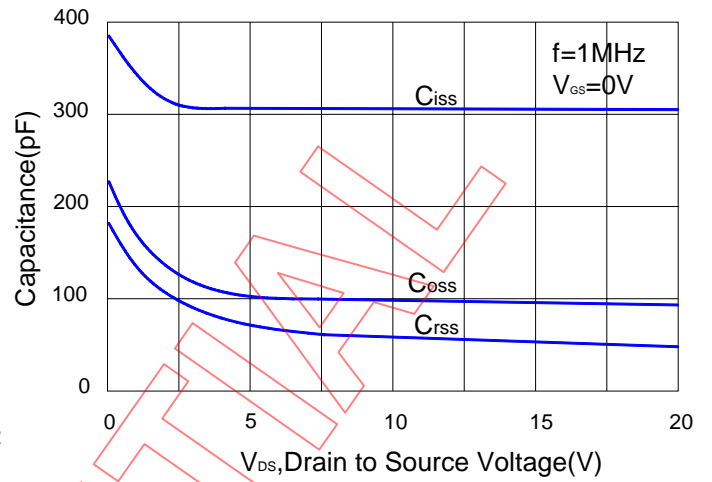
Body Diode Forward Voltage Variation with Source Current and Temperature.



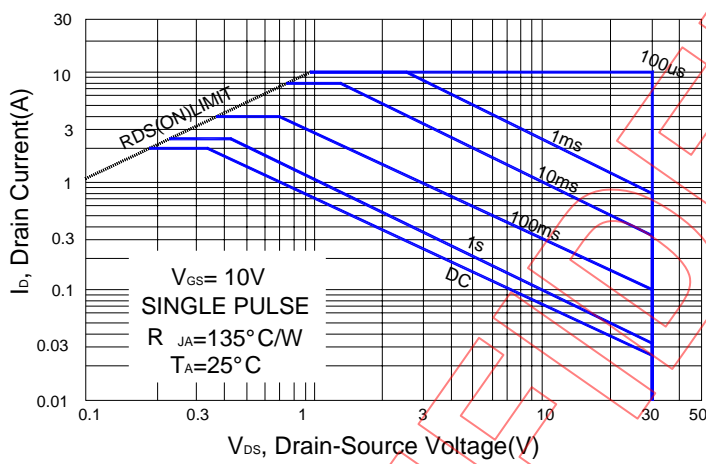
Gate-Charge Characteristics



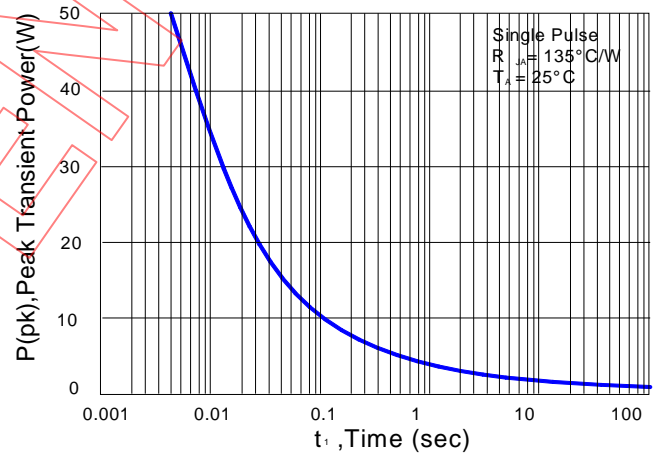
Capacitance Characteristics



Maximum Safe Operating Area.

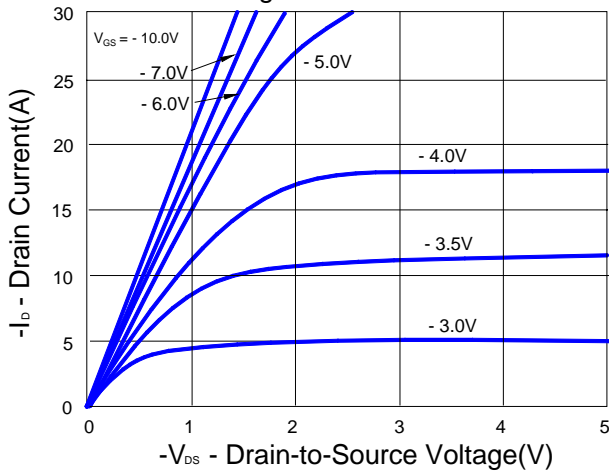


Single Pulse Maximum Power Dissipation

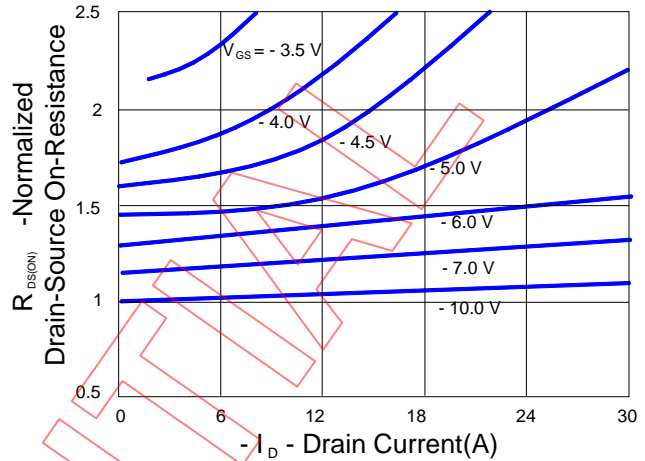


P-CHANNEL

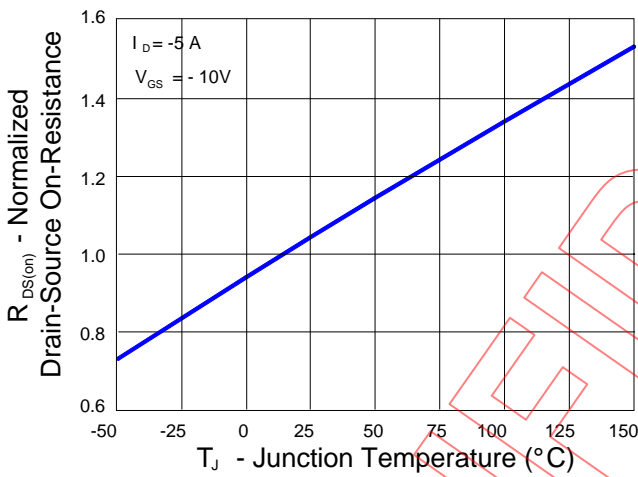
On-Region Characteristics



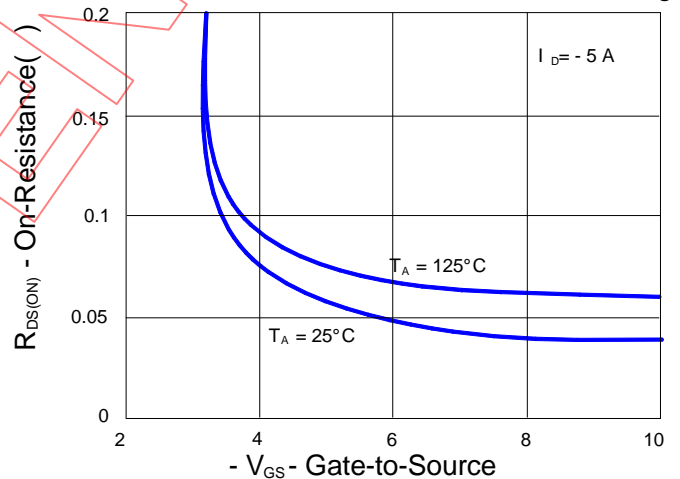
On-Resistance Variation with Drain Current and Gate Voltage



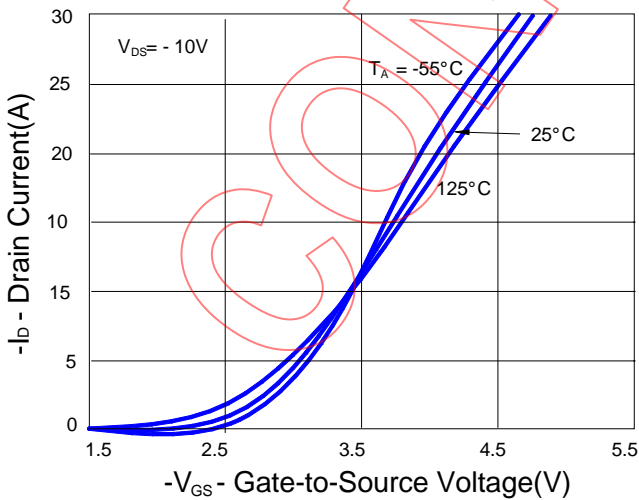
On-Resistance Variation with Temperature



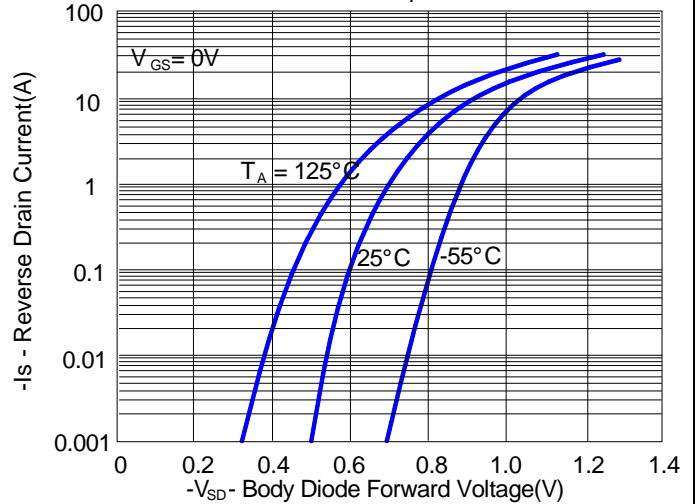
On-Resistance Variation with Gate-to-Source Voltage

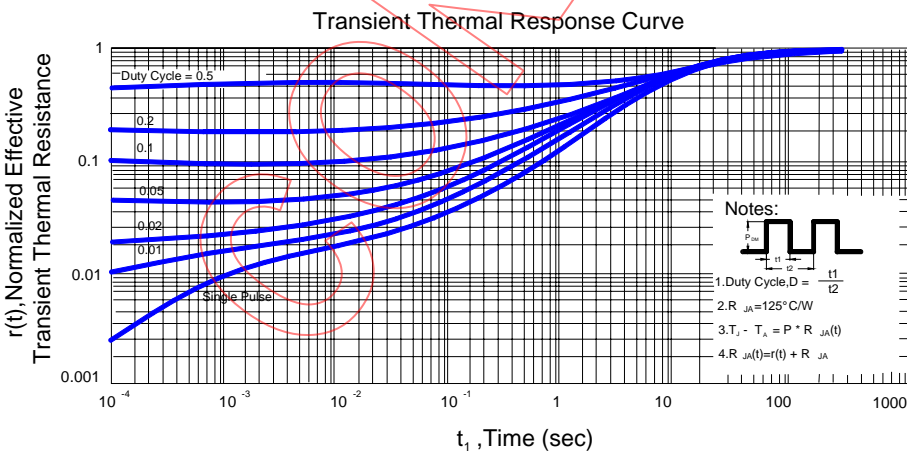
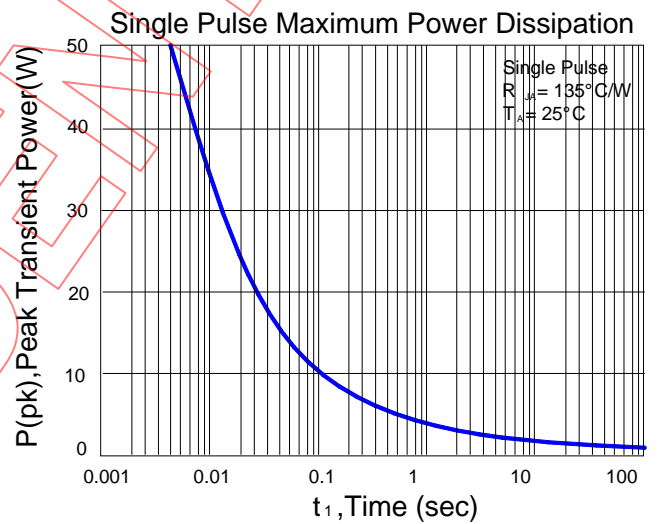
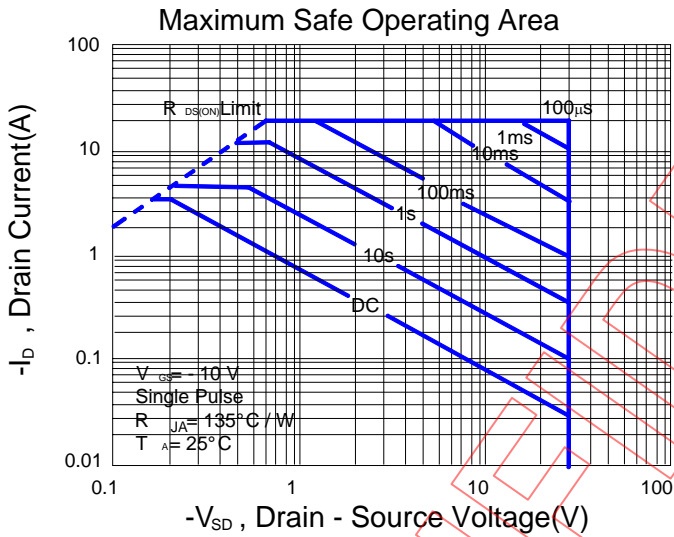
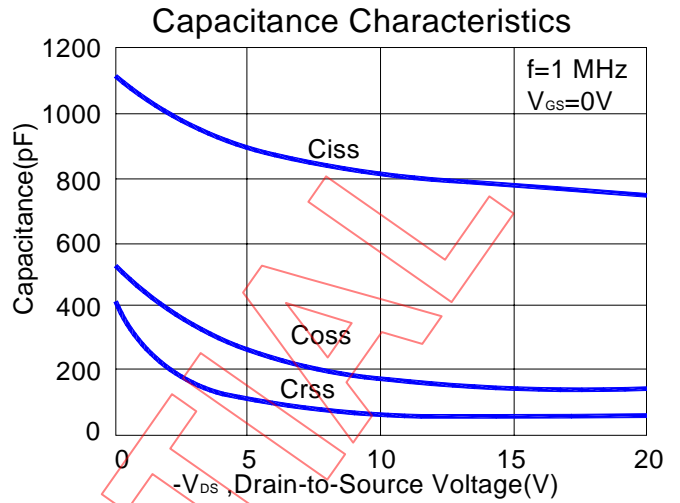
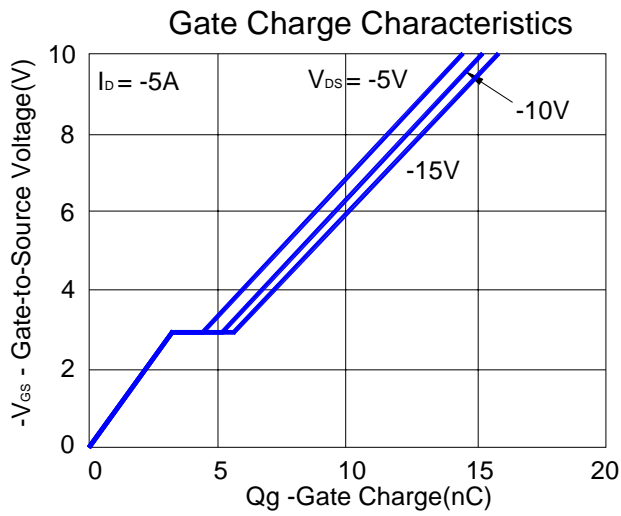


Transfer Characteristics



Body Diode Forward Voltage Variation with Source Current and Temperature





SOIC-8(D) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.5	0.715	0.83
B	3.8	3.9	4.0	I	0.18	0.254	0.25
C	5.8	6.0	6.2	J		0.22	
D	0.38	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.35	1.55	1.75	M			
G	0.1	0.175	0.25	N			

