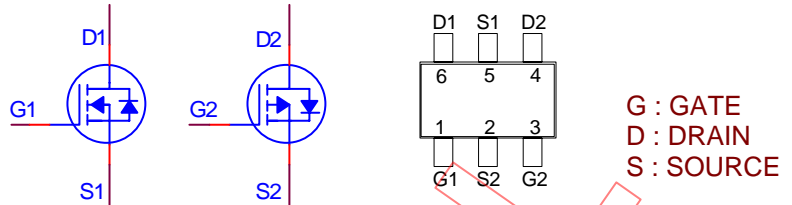


PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
N-Channel	30	68m	3.5A
P-Channel	-30	145m	-2A



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	3.5	-2.3	A
	$T_C = 70\text{ }^\circ\text{C}$		2.8	-1.8	
Pulsed Drain Current ¹		I_{DM}	10	-10	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	1.15		W
	$T_C = 70\text{ }^\circ\text{C}$		0.73		
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150		$^\circ\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275		

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	t 5sec	$R_{\theta JA}$		110	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	Steady State	$R_{\theta JA}$		150	$^\circ\text{C} / \text{W}$
Junction-to-Lead	Steady State	$R_{\theta JL}$		80	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS (T_c = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
STATIC							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	N-Ch	30		V	
		V _{GS} = 0V, I _D = -250μA	P-Ch	-30			
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	N-Ch	1	1.5	2.5	V
		V _{DS} = V _{GS} , I _D = -250μA	P-Ch	-1	-1.5	-2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	N-Ch			±100	nA
		V _{DS} = 0V, V _{GS} = ±20V	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 °C	N-Ch			10	
		V _{DS} = -20V, V _{GS} = 0V, T _J = 55 °C	P-Ch			-10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 10V	N-Ch	8			A
		V _{DS} = -5V, V _{GS} = -10V	P-Ch	-8			
Drain-Source Resistance ¹	On-State R _{DS(ON)}	V _{GS} = 4.5V, I _D = 2A	N-Ch		75	98	m
		V _{GS} = -4.5V, I _D = -1.5A	P-Ch		185	245	
		V _{GS} = 10V, I _D = 3.5A	N-Ch		55	68	
		V _{GS} = -10V, I _D = -2.3A	P-Ch		115	145	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 2.5A	N-Ch		4.5		S
		V _{DS} = -5V, I _D = -2A	P-Ch		3		
DYNAMIC							
Input Capacitance	C _{iss}	N-Channel	N-Ch		200		pF
			P-Ch		190		
Output Capacitance	C _{oss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	N-Ch		40		pF
		P-Channel	P-Ch		60		
Reverse Transfer Capacitance	C _{rss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz	N-Ch		20		pF
			P-Ch		30		

Total Gate Charge ²	Q_g	N-Channel $V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V,$ $I_D = 2.5A$	N-Ch P-Ch	6.5 4.5	8.5 6.0	nC
Gate-Source Charge ²	Q_{gs}	P-Channel	N-Ch P-Ch	1.2 1.2		
Gate-Drain Charge ²	Q_{gd}	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -2A$	N-Ch P-Ch	1.6 0.9		nS
Turn-On Delay Time ²	$t_{d(on)}$	N-Channel	N-Ch P-Ch	7 8	11 12	
Rise Time ²	t_r	$V_{DS} = 15V, R_L = 15$ $I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6$	N-Ch P-Ch	12 11	18 18	nS
Turn-Off Delay Time ²	$t_{d(off)}$	P-Channel	N-Ch P-Ch	12 14	18 21	
Fall Time ²	t_f	$V_{DS} = -15V, R_L = 15$ $I_D \cong -1A, V_{GS} = -10V, R_{GEN} = 6$	N-Ch P-Ch	7 8	11 12	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Forward Voltage ¹	V_{SD}	$I_F = 0.8A, V_{GS} = 0V$	N-Ch		1.2	V
		$I_F = -0.8A, V_{GS} = 0V$	P-Ch		-1.2	
Reverse Recovery Time	t_{rr}	$I_F = 0.8A, di_F/dt = 100A / \mu S$	N-Ch	40	80	nS
		$I_F = -0.8A, di_F/dt = 100A / \mu S$	P-Ch	40	80	

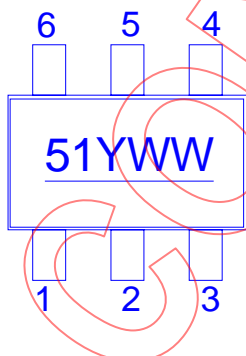
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

REMARK: THIS PRODUCT MARKED WITH "51YWW"

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



Marking Description:

5 - N+P MOSFET

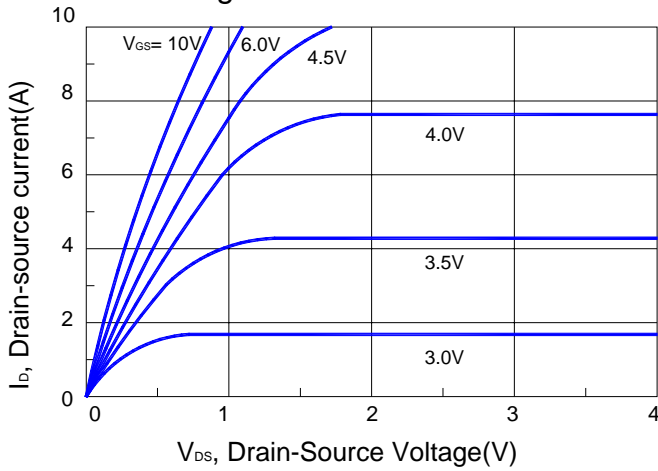
1 - Serial Number

Y - Year

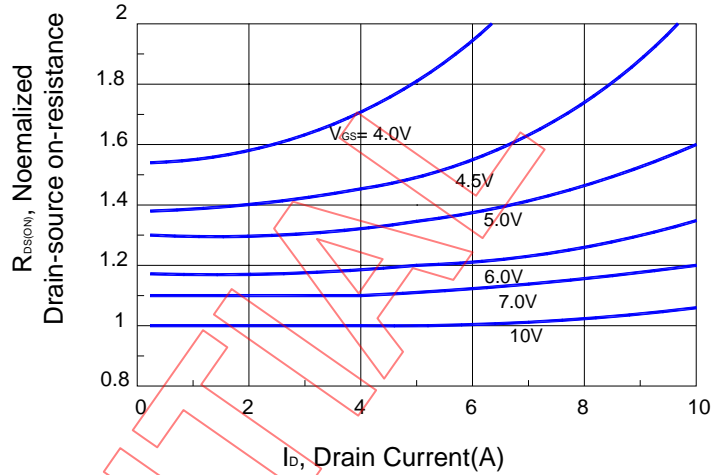
W - Week

N-CHANNEL

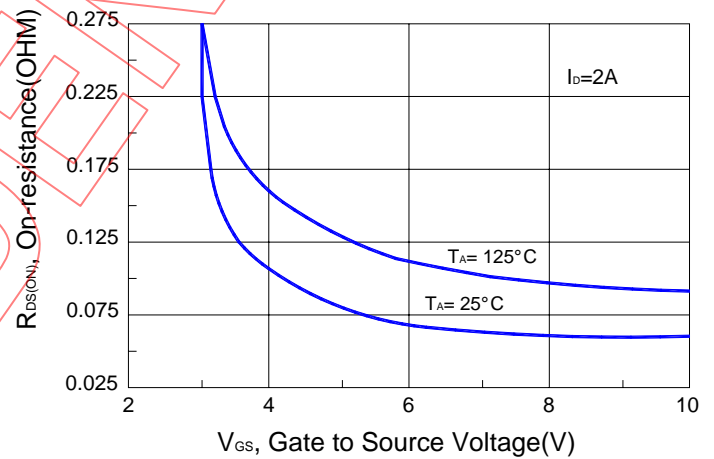
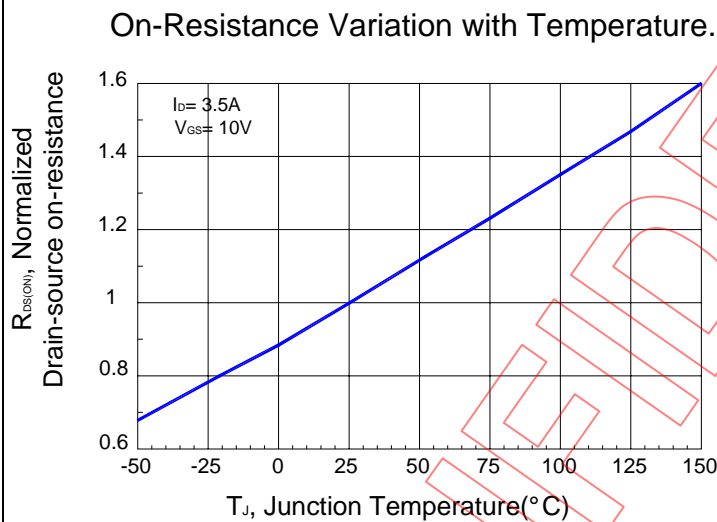
On-Region Characteristics.



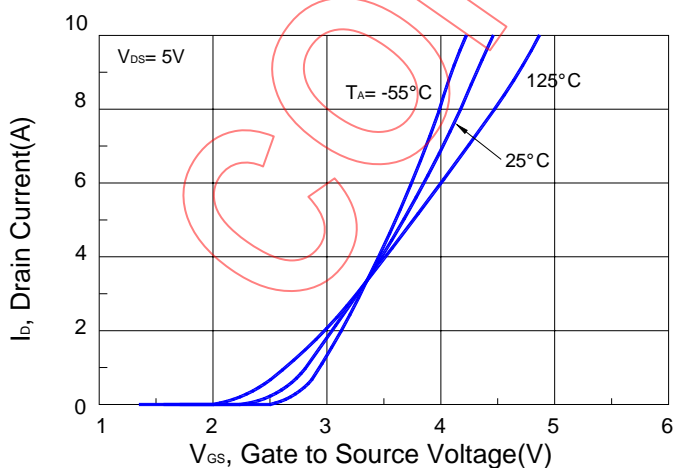
On-Resistance Variation with Drain Current and Gate Voltage.



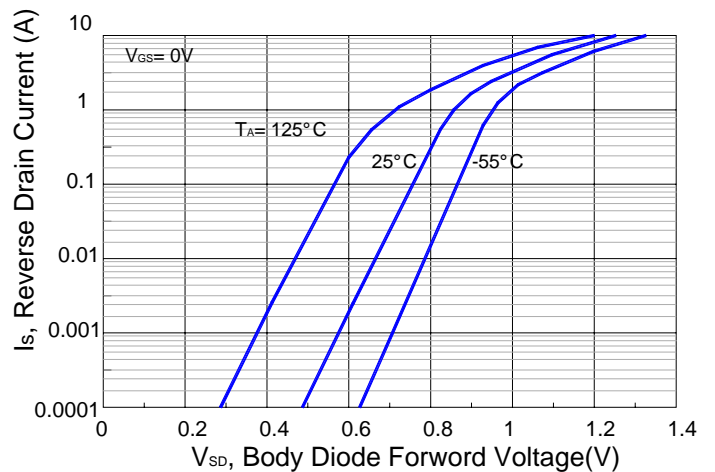
On-Resistance Variation with Gate-to-Source Voltage.



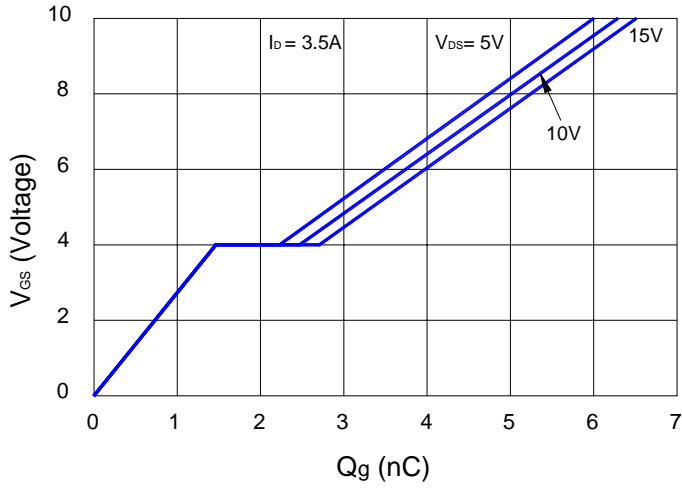
Transfer Characteristics.



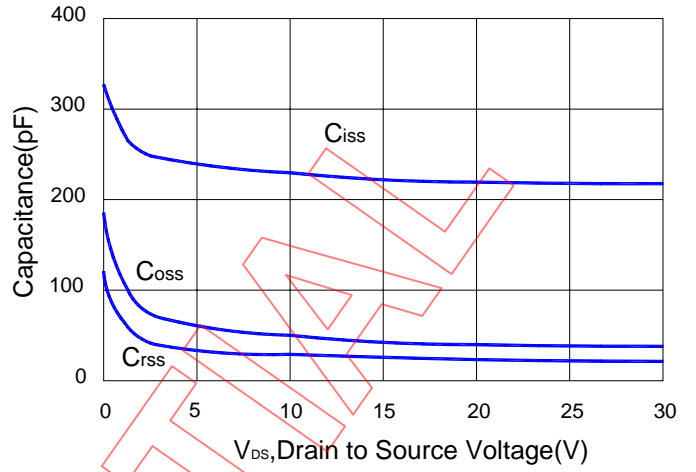
Body Diode Forward Voltage Variation with Source Current and Temperature.



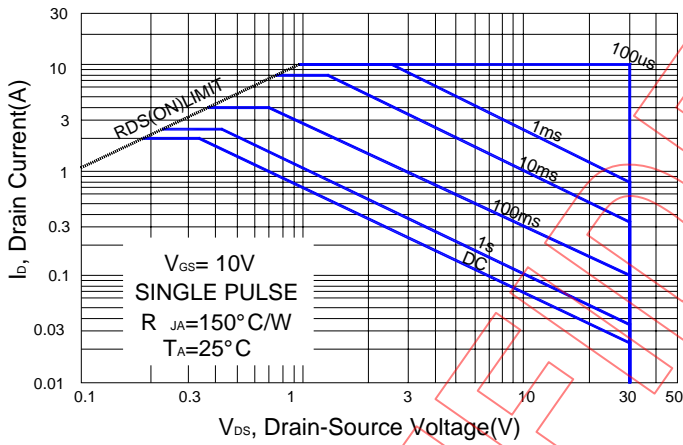
Gate-Charge Characteristics



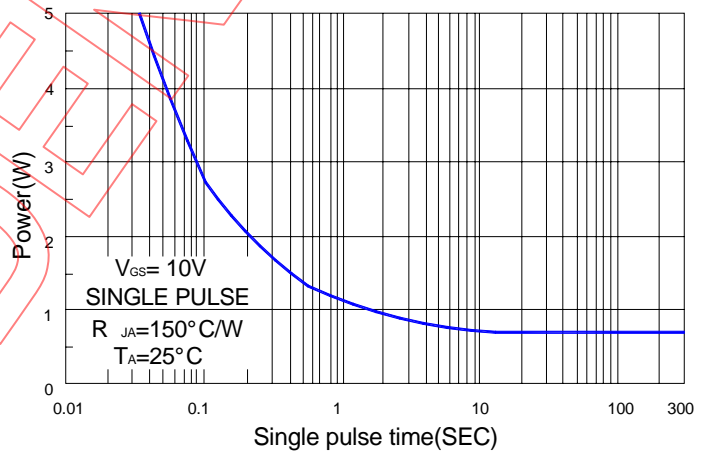
Capacitance Characteristics



Maximum Safe Operating Area.



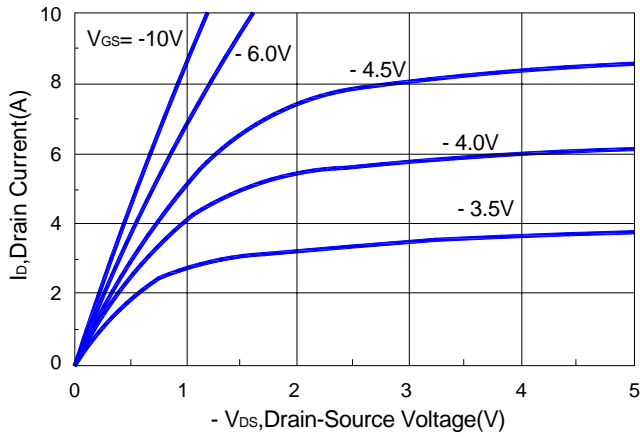
Single Pulse Maximum Power Dissipation.



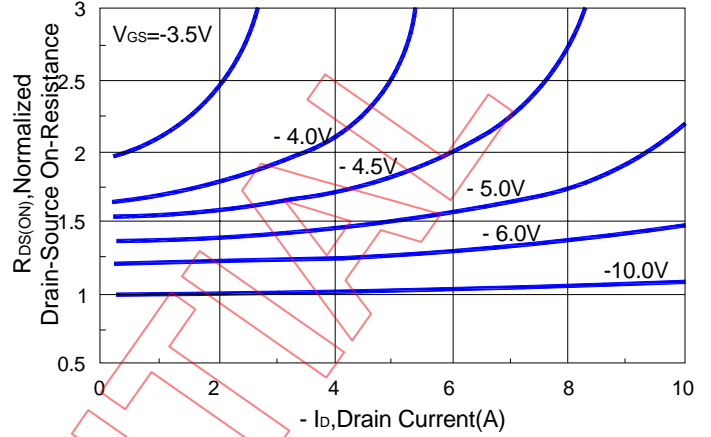
COMMON

P-CHANNEL

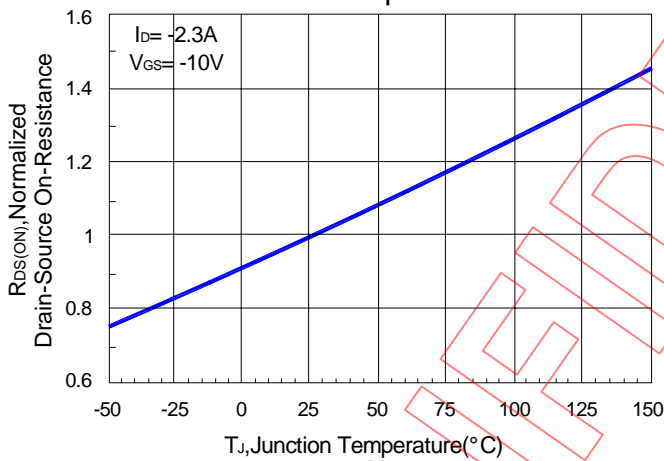
On-Region Characteristics



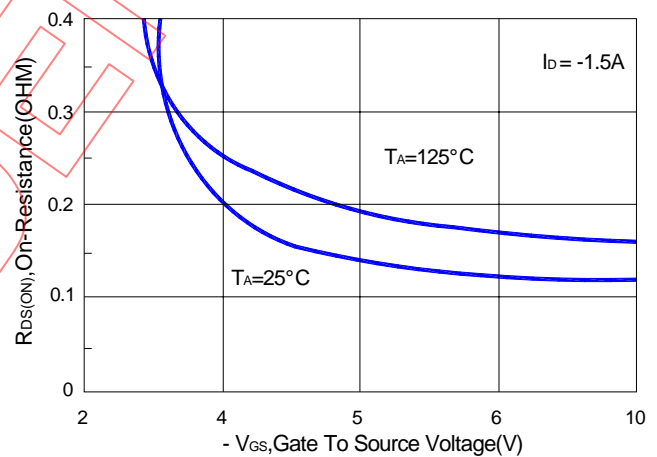
On-Resistance Variation with Drain Current and Gate Voltage.



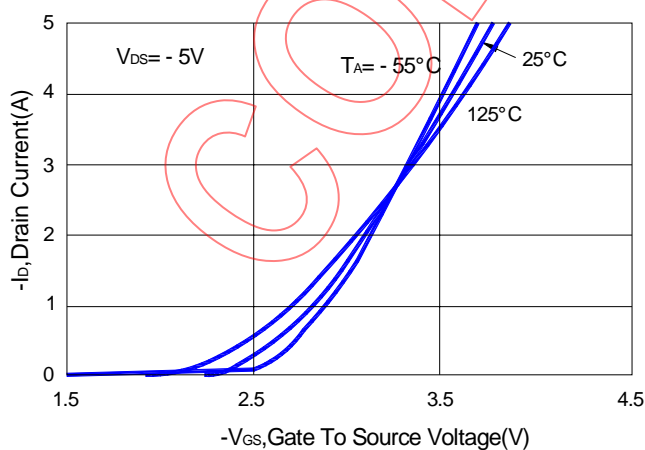
On-Resistance Variation with Temperature



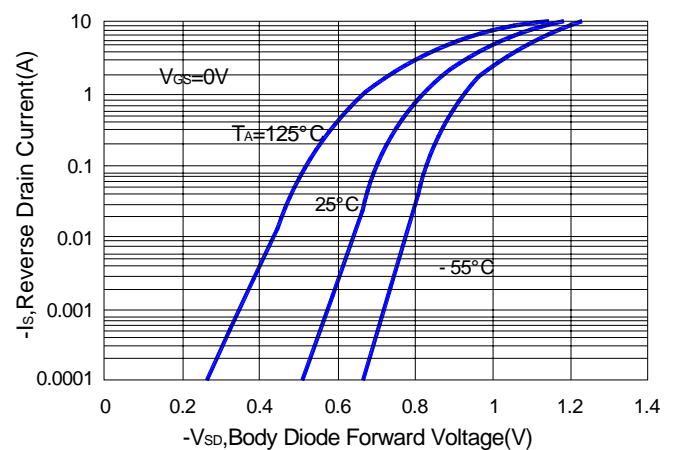
On-Resistance Variation with Gate-to-Source Voltage.



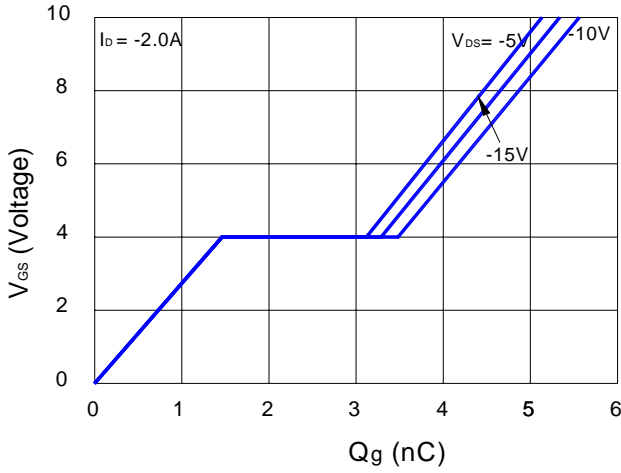
Transfer Characteristics



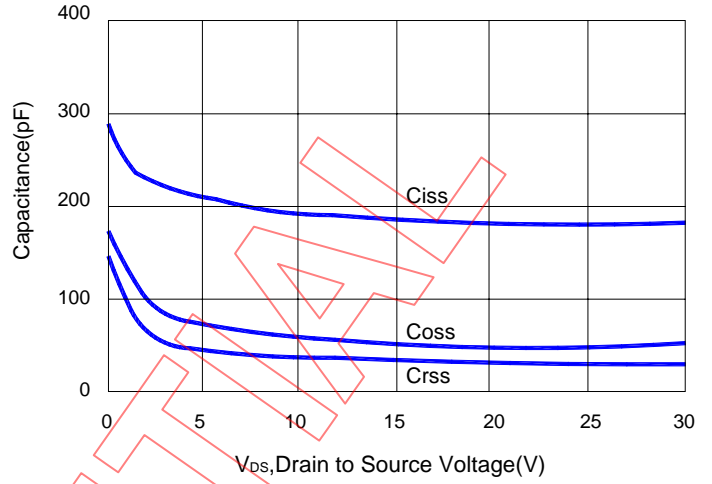
Body Diode Forward Voltage Variation With Source Current and Temperature.



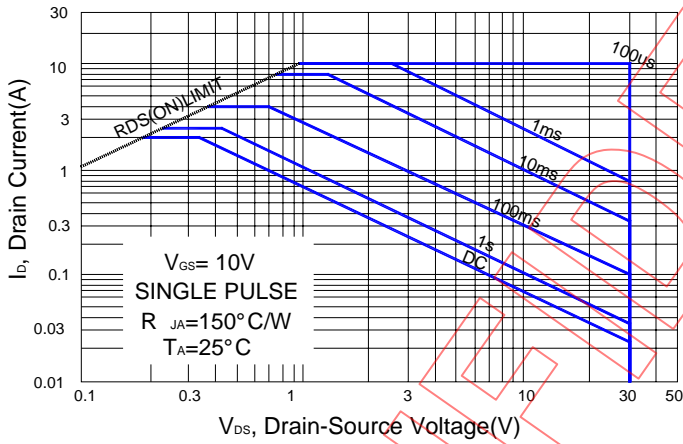
Gate-Charge Characteristics



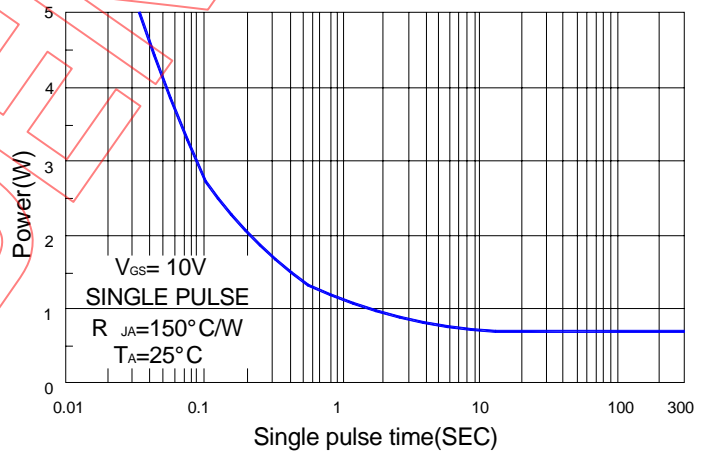
Capacitance Characteristics



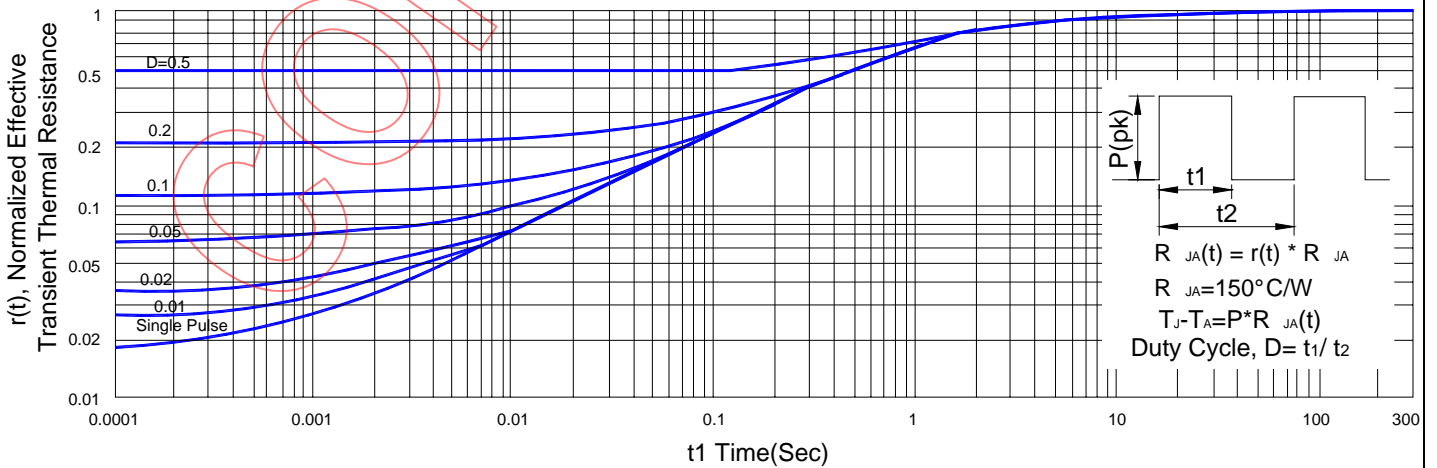
Maximum Safe Operating Area.



Single Pulse Maximum Power Dissipation.



Transient Thermal Response Curve.



TSOP- 6 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.95		H	0.08	0.13	0.2
B	2.5	2.8	3.1	I	0.3		0.6
C	1.5	1.6	1.7	J			
D	2.7	2.9	3.1	K			
E	0.7		1.2	L			
F	0		0.15	M			
G	0.3	0.4	0.5	N			

