NIKO-SEM

N-Channel Logic Level Enhancement Mode Field Effect Transistor_Preliminary

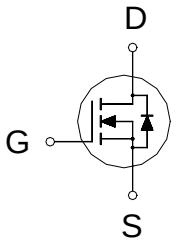
P2703BAG

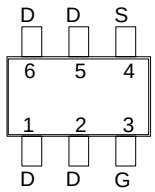
TSOP-6

Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	27mΩ	7A





1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25 °C	I_D	7	A
	T_C = 100 °C		5	
Pulsed Drain Current[1]		I_{DM}	20	
Power Dissipation	T_C = 25 °C	P_D	1.6	W
	T_C = 100 °C		1.2	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C
Lead Temperature ($^1/_{16}$" from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		30	°C / W
Junction-to-Ambient	$R_{\theta JA}$		78	

[1]Pulse width limited by maximum junction temperature.
[2]Duty cycle ≤ 1%

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

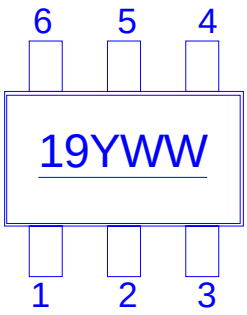
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS MIN	LIMITS TYP	LIMITS MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	1.5	3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	μA
		V_{DS} = 20V, V_{GS} = 0V, T_J = 125 °C			10	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 5V, V_{GS} = 10V	20			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 5A		32	40	mΩ
		V_{GS} = 10V, I_D = 7A		23	27	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 7A		14.4		S

DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1MHz		680		pF
Output Capacitance	C_{oss}			140		
Reverse Transfer Capacitance	C_{rss}			70		
Total Gate Charge[2]	Q_g	V_{DS} = 15V, V_{GS} = 10V, I_D = 7A		10	15	nC
Gate-Source Charge[2]	Q_{gs}			1.7		
Gate-Drain Charge[2]	Q_{gd}			2.1		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 10V, $I_D \cong$ 1A, V_{GS} = 10V, R_{GEN} = 6Ω		8.0		nS
Rise Time[2]	t_r			4.0		
Turn-Off Delay Time[2]	$t_{d(off)}$			22.0		
Fall Time[2]	t_f			5.0		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S				3	A
Forward Voltage[1]	V_{SD}	I_F = 1A, V_{GS} = 0V			1.1	V

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.
[3]Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH "19YWW", DATE CODE or LOT #

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



Marking Description:

1 - N MOSFET

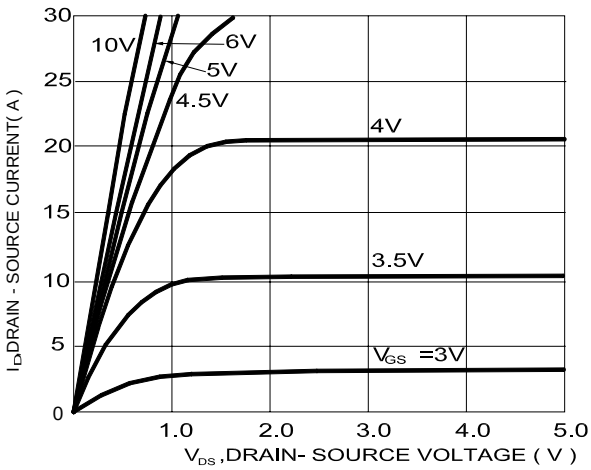
9 - Serial Number

Y - Year

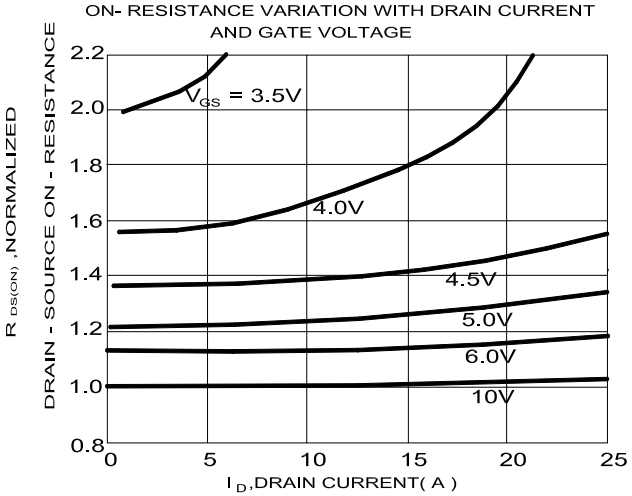
W - Week

TYPICAL CHARACTERISTICS

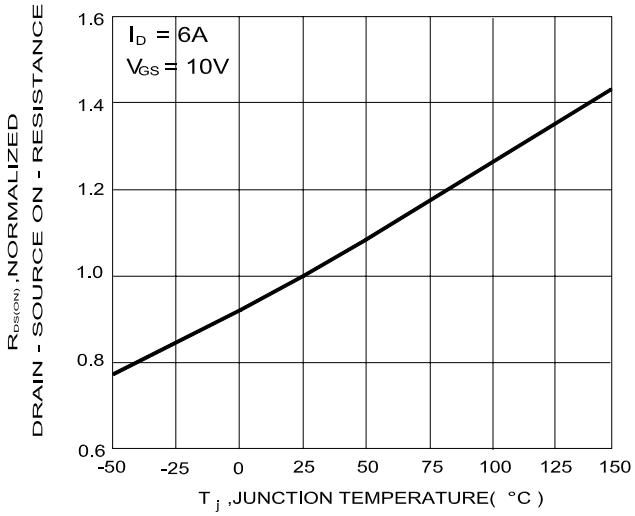
ON-REGION CHARACTERISTIC



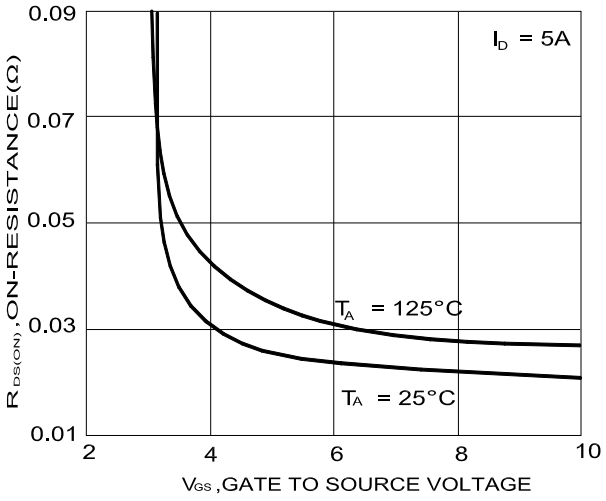
ON- RESISTANCE VARIATION WITH DRAIN CURRENT AND GATE VOLTAGE



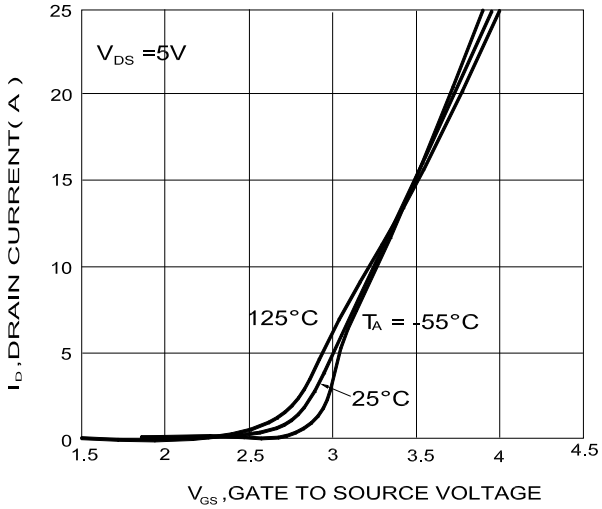
ON- RESISTANCE VARIATION WITH TEMPERATURE



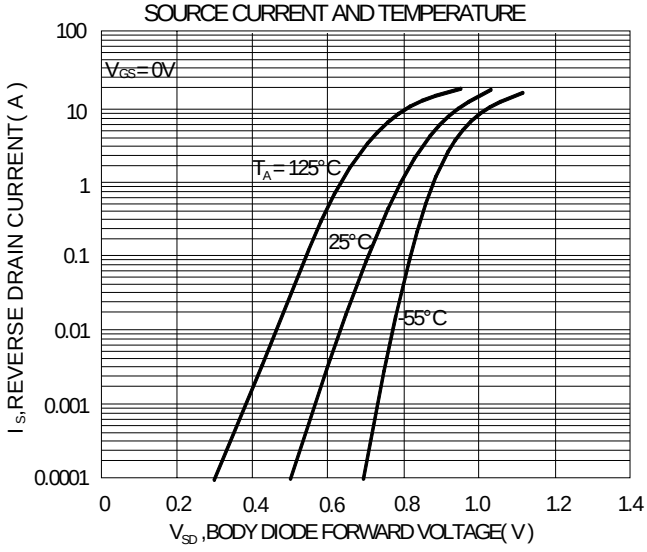
ON-RESISTANCE VARIATION WITH GATE-TO-SOURCE VOLTAGE



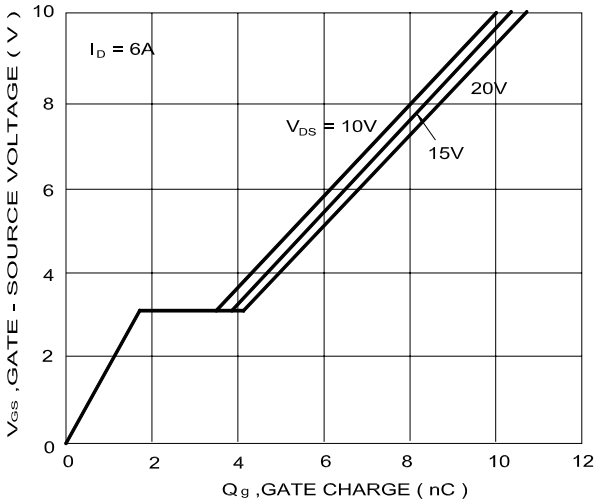
TRANSFER CHARACTERISTICS



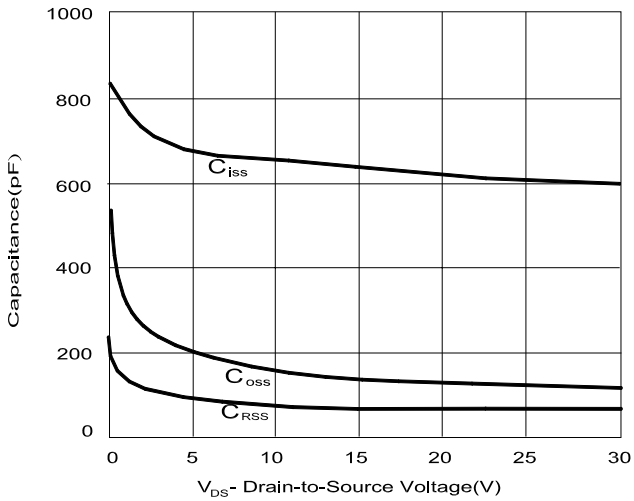
BODY DIODE FORWARD VOLTAGE VARIATION WITH SOURCE CURRENT AND TEMPERATURE



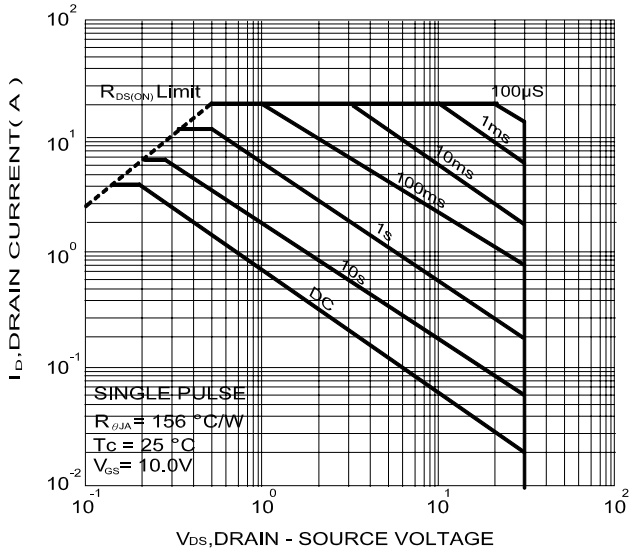
GATE CHARGE CHARACTERISTICS



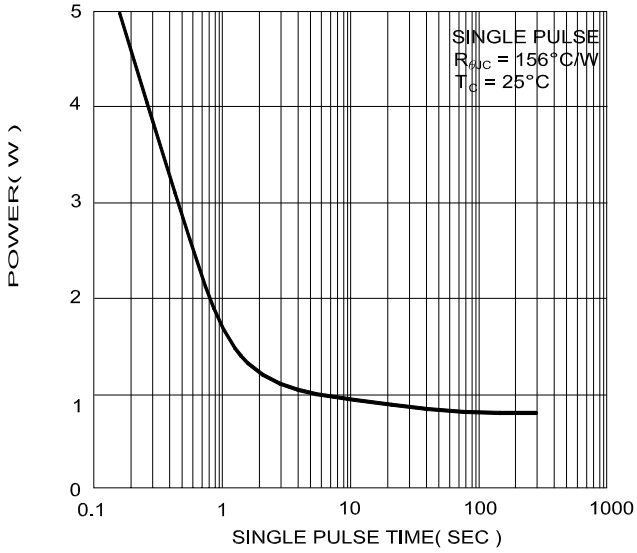
Capacitance Characteristics



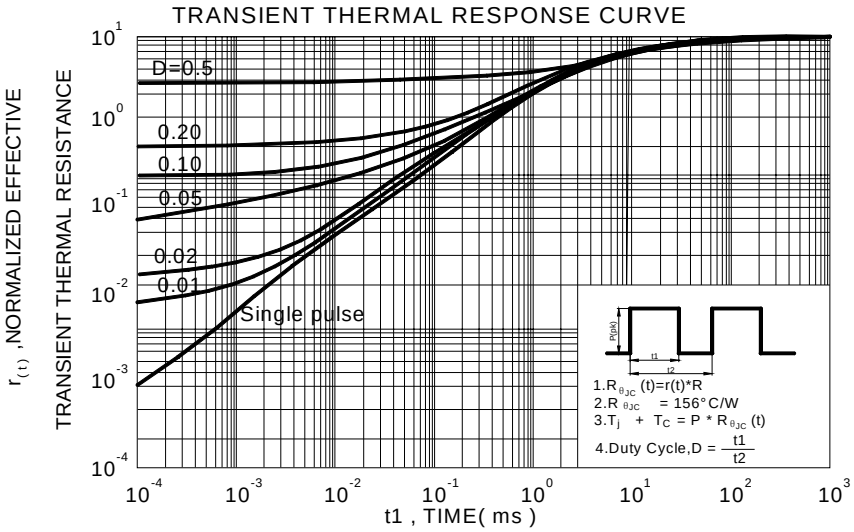
MAXIMUM SAFE OPERATING AREA



SINGLEPULSE MAXIMUM POWER DISSIPATION

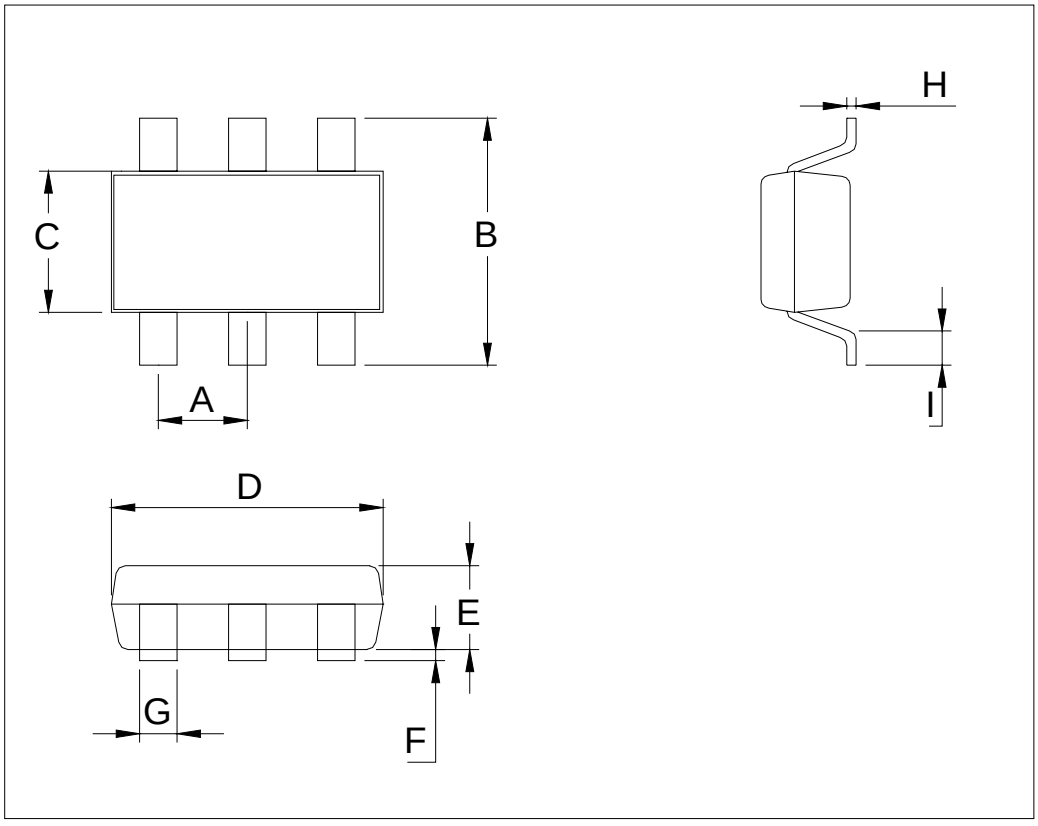


TRANSIENT THERMAL RESPONSE CURVE



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			



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