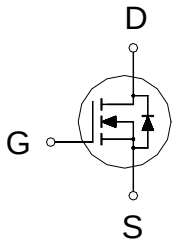
NIKO-SEM

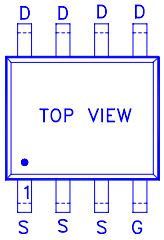
N-Channel Enhancement Mode Field Effect Transistor

P1103BVG
SOP-8
Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	11mΩ	11A





G : GATE
D : DRAIN
S : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25 °C	I_D	11	A
	T_C = 90 °C		12	
Pulsed Drain Current[1]		I_{DM}	100	
Power Dissipation	T_C = 25 °C	P_D	2.5	W
	T_C = 90 °C		3.0	
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		50	°C / W

[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	2.5	
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 = 55 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 10A		13	16.5	mΩ
		V_{GS} = 10V, I_D = 11A		9	11	
Forward Transconductance[1]	g_{fs}	V_{DS} = 15V, I_D = 10A		38		S

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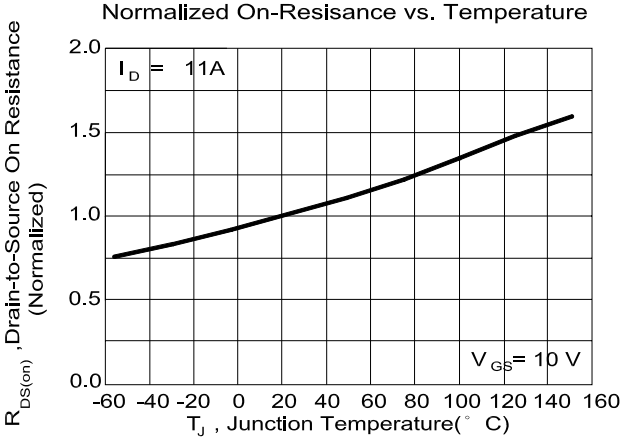
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1MHz		1800		pF
Output Capacitance	C_{oss}			720		
Reverse Transfer Capacitance	C_{rss}			15		
Total Gate Charge[2]	Q_g	V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = 10V, I_D = 10A		17	26	nC
Gate-Source Charge[2]	Q_{gs}			3.4		
Gate-Drain Charge[2]	Q_{gd}			5.1		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 15V , R_L = 25Ω $I_D \cong$ 1A, V_{GS} = 10V, R_{GEN} = 6Ω		8.6		nS
Rise Time[2]	t_r			21		
Turn-Off Delay Time[2]	$t_{d(off)}$			43		
Fall Time[2]	t_f			10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S				2.5	A
Pulsed Current[3]	I_{SM}				5	
Forward Voltage[1]	V_{SD}	I_F = 1A, V_{GS} = 0V			1.1	V
Reverse Recovery Time	t_{rr}	I_F = 2.3A, dI_F/dt = 100A / μS		50	80	nS

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

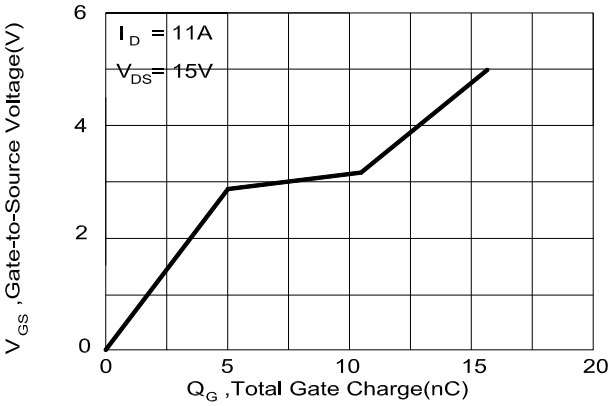
REMARK: THE PRODUCT MARKED WITH "P1103BVG", DATE CODE or LOT #

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

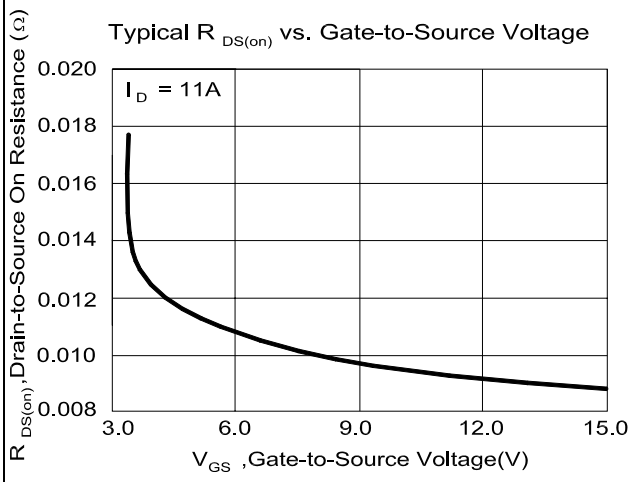
Normalized On-Resisance vs. Temperature



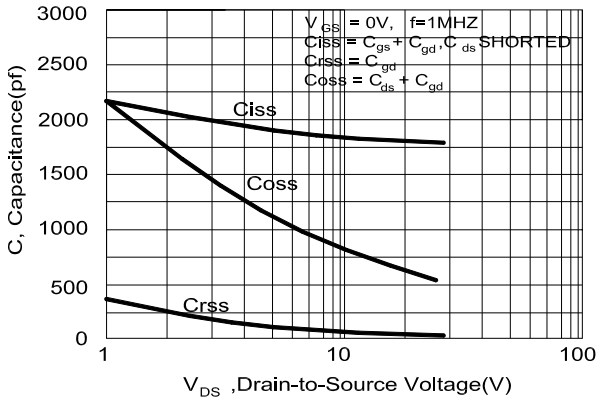
Gate-to-Source Voltage vs.Typical Gate Charge



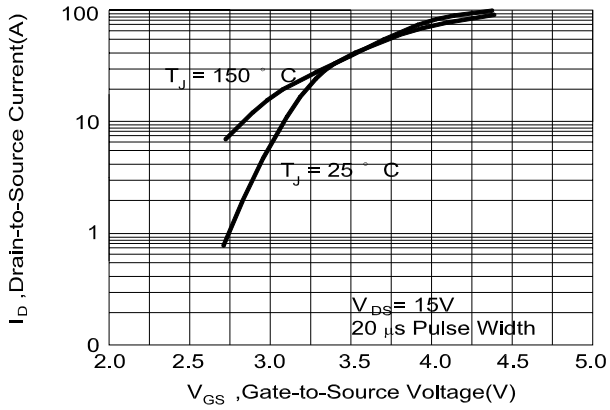
Typical $R_{DS(on)}$ vs. Gate-to-Source Voltage



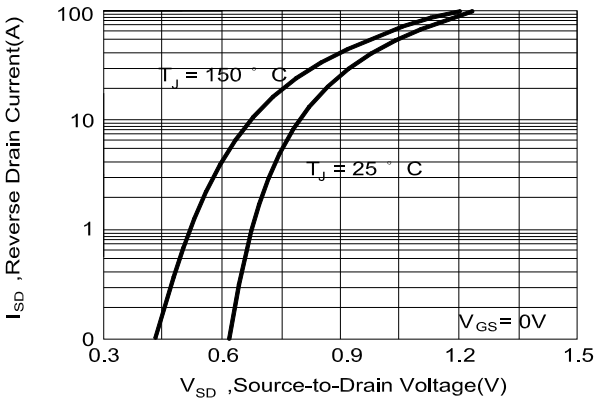
Typical Capacitance vs. Drain-to-Source Voltage



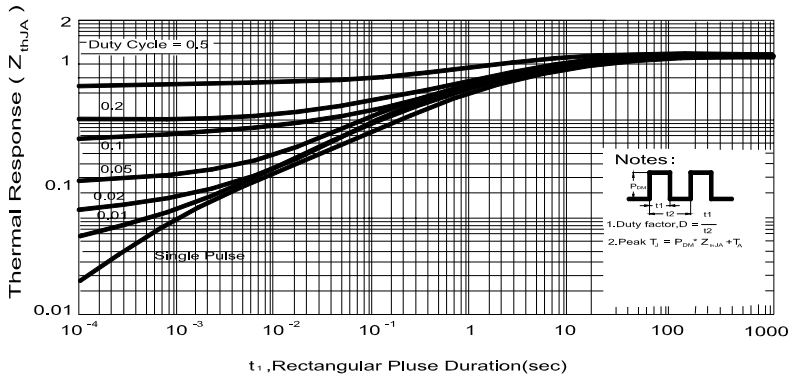
Typical Transfer Characteristics



Typical Source-Drain Diode Forward Voltage



Maximum Effective Transient Thermal Impedance,Junction-to-Ambient



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