



SANYO Semiconductors

DATA SHEET

VEC2611

N-Channel and P-Channel Silicon MOSFETs

General-Purpose Switching Device Applications

Features

- The VEC2611 incorporates an N-channel MOSFET and a P-channel MOSFET that feature low ON-resistance, thereby enabling high-density mounting.
- 1.8V drive.
- Mounting height 0.75mm.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V _{DSS}		20	-12	V
Gate-to-Source Voltage	V _{GSS}		±10	±8	V
Drain Current (DC)	I _D		3	-2.6	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	12	-10.4	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm)1unit	0.9		W
Total Dissipation	P _T	Mounted on a ceramic board (900mm²×0.8mm)	1.0		W
Channel Temperature	T _{ch}		150		°C
Storage Temperature	T _{stg}		-55 to +150		°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0V	20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =1.5A	3.3	5.6		S

Marking : CP

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VEC2611

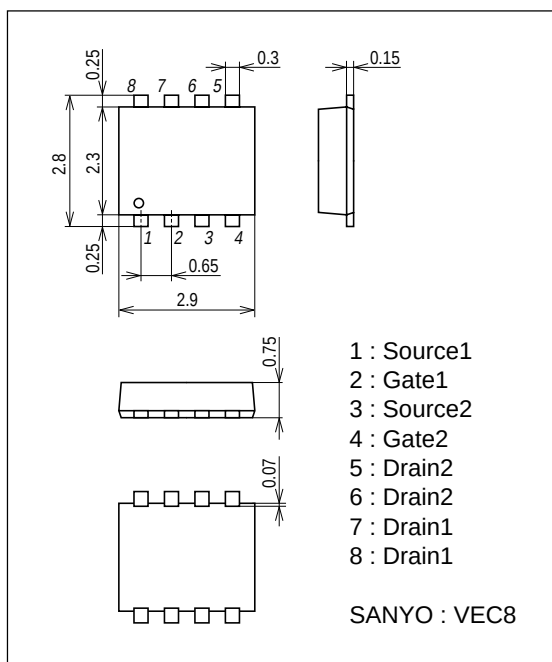
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=1.5A, V_{GS}=4V$		53	69	$m\Omega$
	$R_{DS(on)2}$	$I_D=1A, V_{GS}=2.5V$		63	90	$m\Omega$
	$R_{DS(on)3}$	$I_D=0.5A, V_{GS}=1.8V$		77	116	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		280		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		60		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		38		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		13		ns
Rise Time	t_r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		35		ns
Fall Time	t_f	See specified Test Circuit.		25		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		8.8		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		0.85		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=4V, I_D=3A$		0.85		nC
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$		0.82	1.2	V
[P-channel]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=-1mA, V_{GS}=0V$	-12			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12V, V_{GS}=0V$			-10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 6.4V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=-6V, I_D=-1mA$	-0.3		-1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=-6V, I_D=-1.3A$	2.5	4.2		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=-1.3A, V_{GS}=-4.5V$		80	105	$m\Omega$
	$R_{DS(on)2}$	$I_D=-0.7A, V_{GS}=-2.5V$		115	165	$m\Omega$
	$R_{DS(on)3}$	$I_D=-0.3A, V_{GS}=-1.8V$		155	265	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=-6V, f=1MHz$		450		pF
Output Capacitance	C_{oss}	$V_{DS}=-6V, f=1MHz$		100		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-6V, f=1MHz$		85		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		15		ns
Rise Time	t_r	See specified Test Circuit.		70		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		65		ns
Fall Time	t_f	See specified Test Circuit.		50		ns
Total Gate Charge	Q_g	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		6.5		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		0.8		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-2.6A$		2.0		nC
Diode Forward Voltage	V_{SD}	$I_S=-2.6A, V_{GS}=0V$		-0.87	-1.5	V

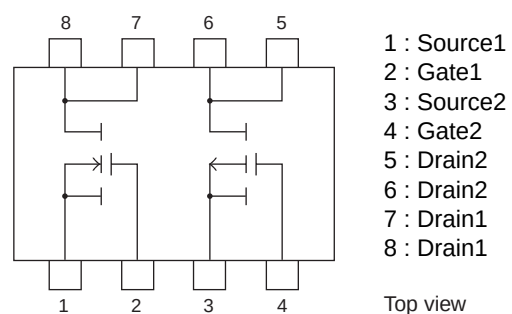
Package Dimensions

unit : mm (typ)

7012-002

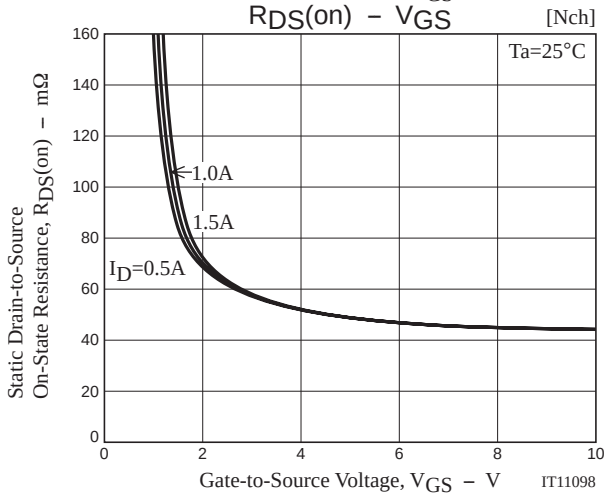
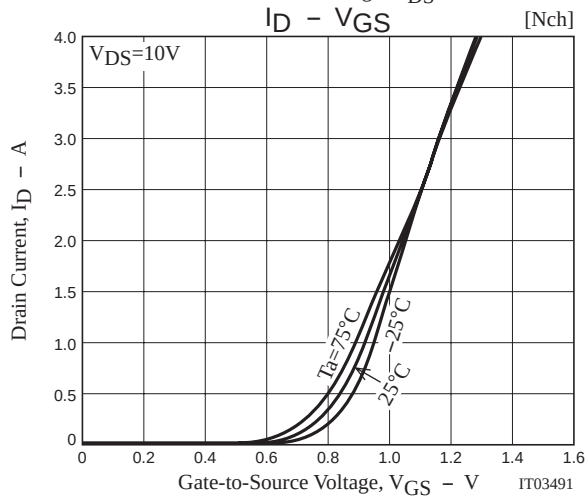
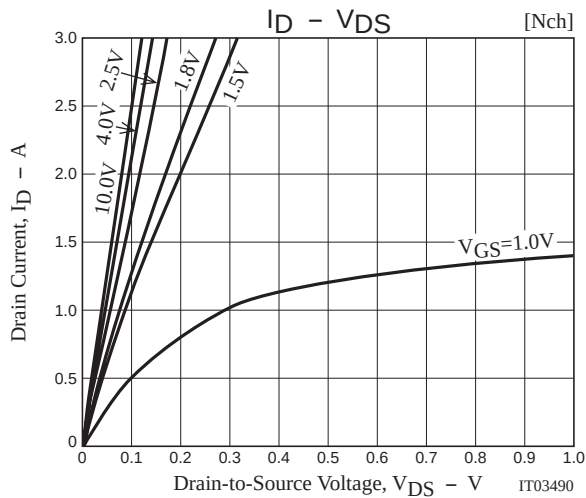
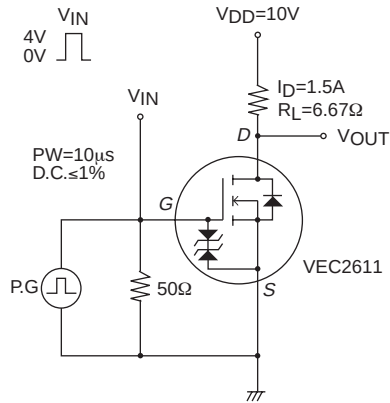


Electrical Connection

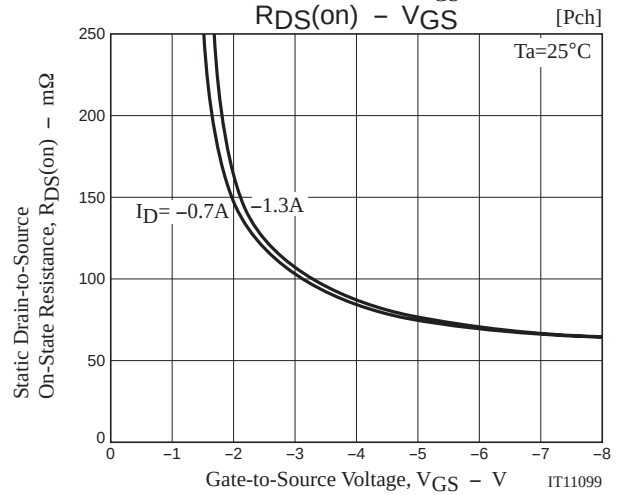
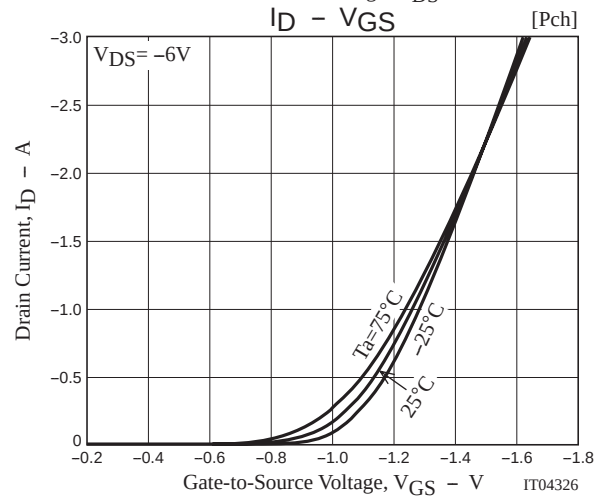
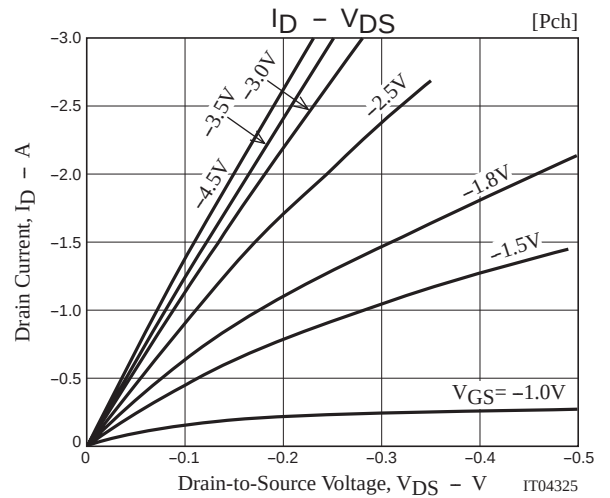
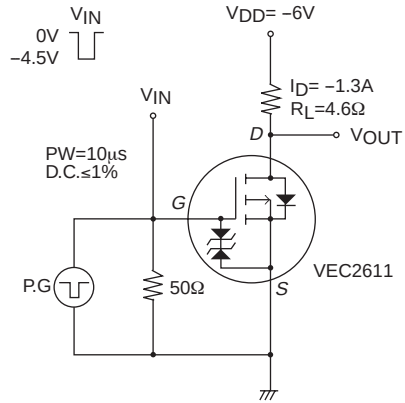


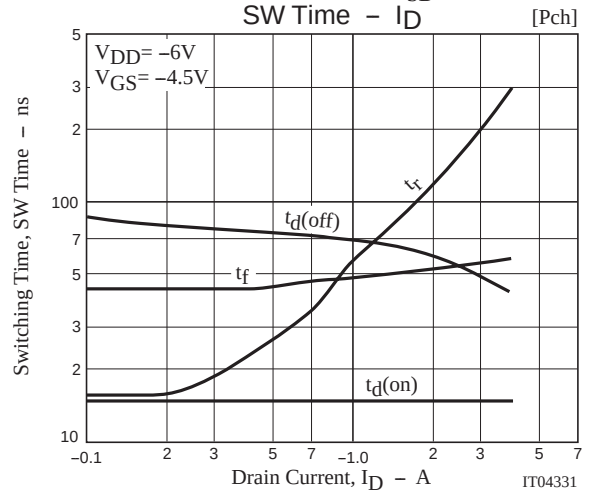
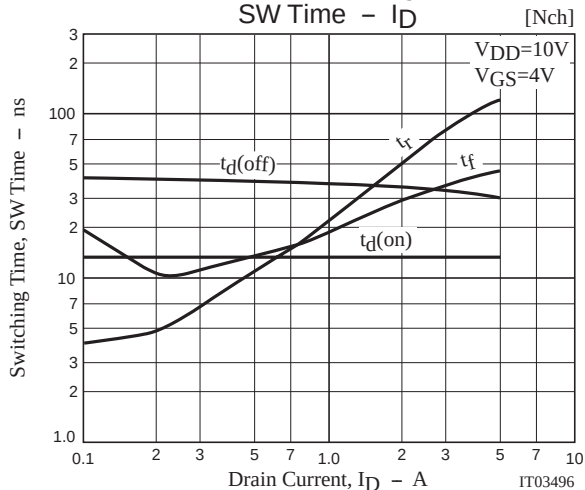
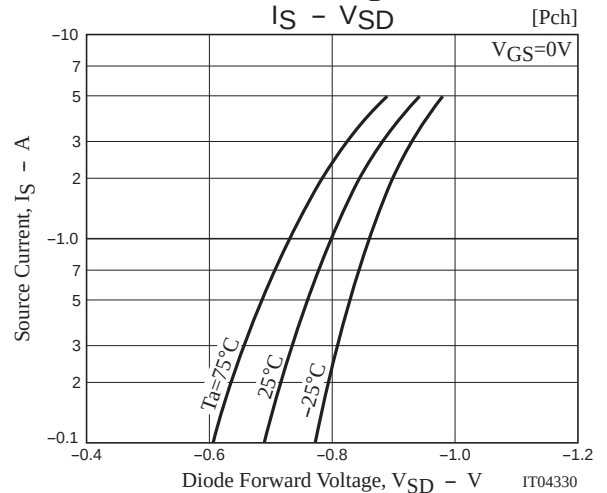
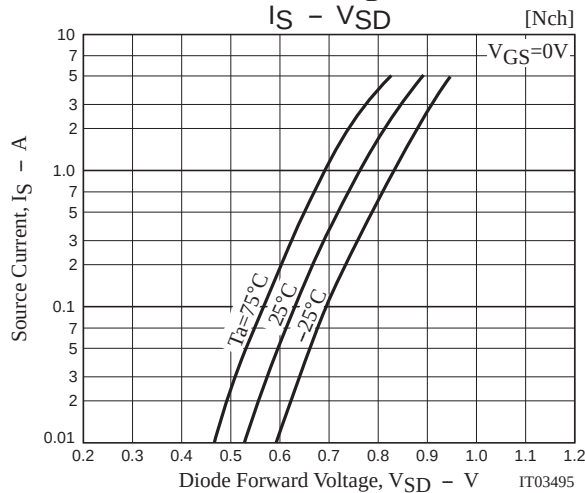
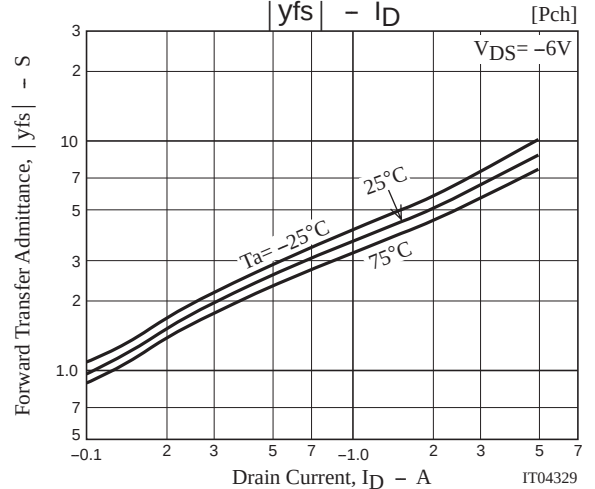
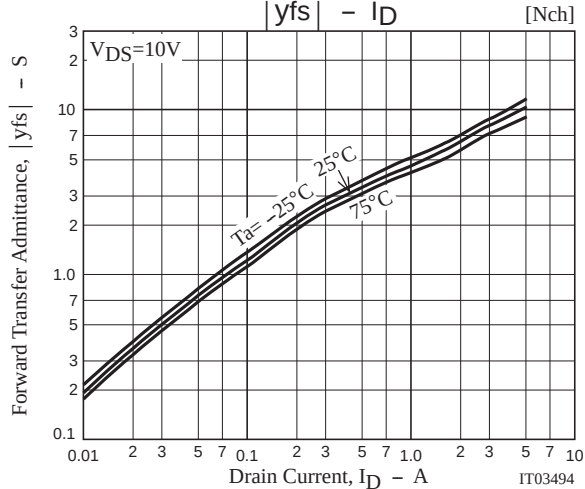
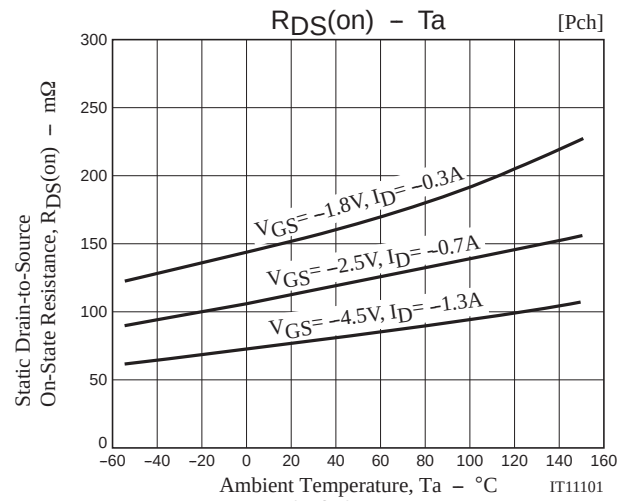
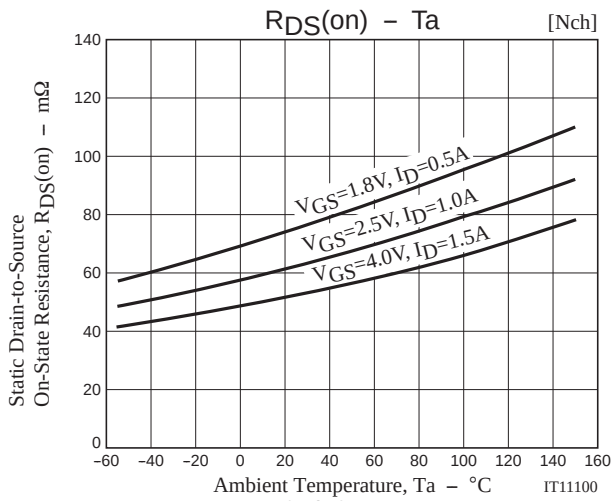
Switching Time Test Circuit

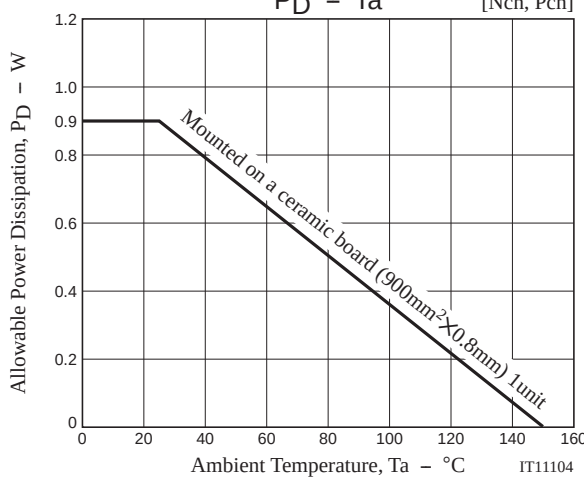
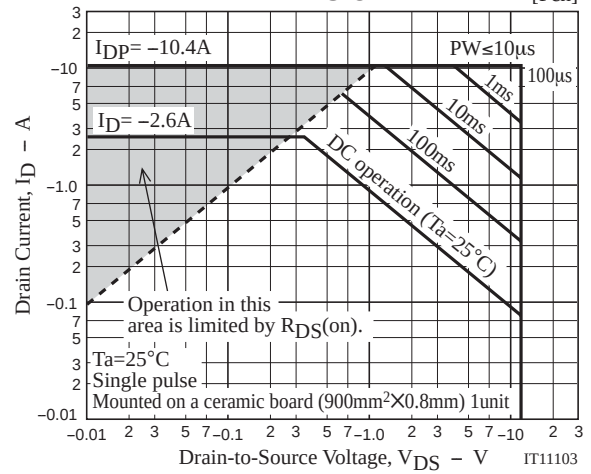
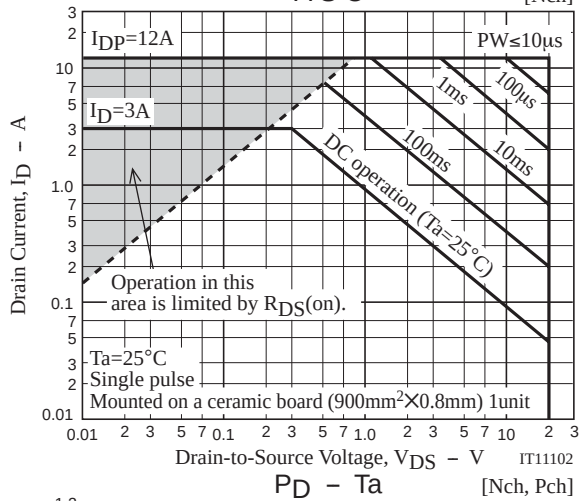
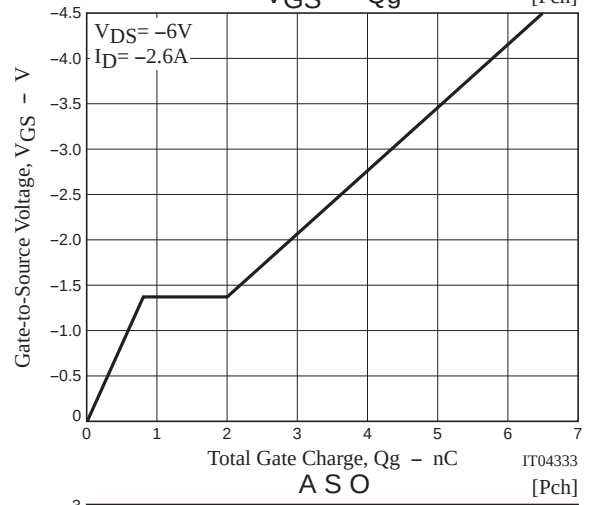
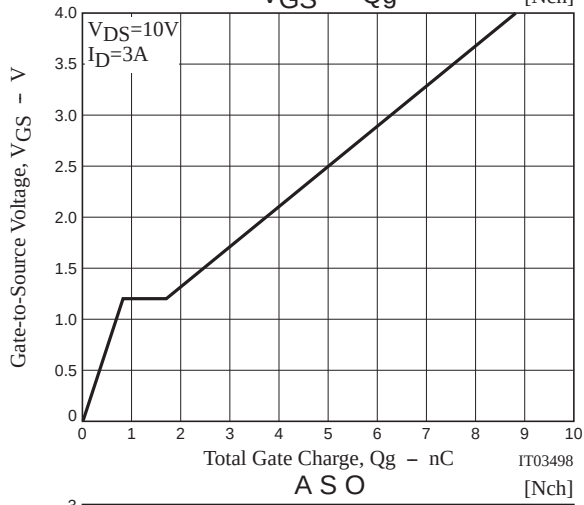
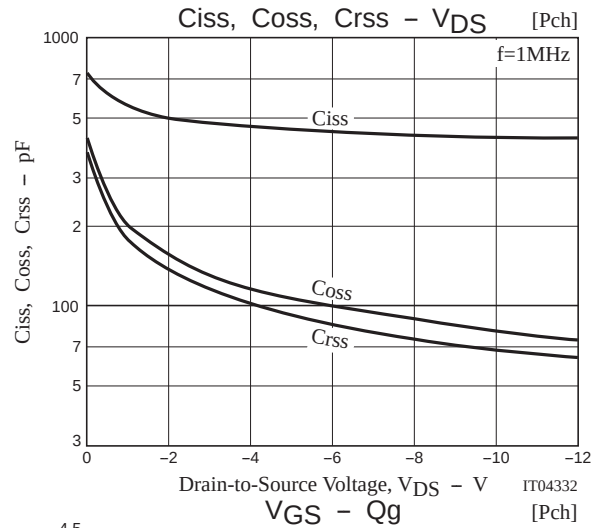
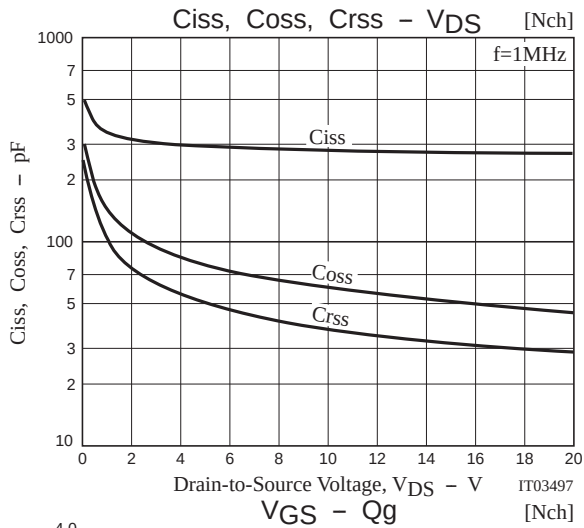
[N-channel]



[P-channel]







Note on usage : Since the VEC2611 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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