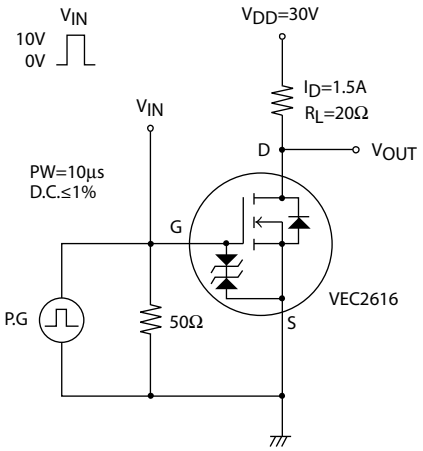
ELECTRICAL CHARACTERISTICS at Ta = 25°C (Note 2)

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
[N-Channel]						
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transconductance	g_{FS}	V_{DS}=10V, I_D=1.5A		2.6		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=1.5A, V_{GS}=10V		62	80	mΩ
	$R_{DS}(on)2$	I_D=0.75A, V_{GS}=4.5V		76	106	mΩ
	$R_{DS}(on)3$	I_D=0.75A, V_{GS}=4V		83	116	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		505		pF
Output Capacitance	Coss			57		pF
Reverse Transfer Capacitance	Crss			37		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		7.3		ns
Rise Time	t_r			7.5		ns
Turn-OFF Delay Time	$t_d(off)$			41		ns
Fall Time	t_f			22		ns
Total Gate Charge	Qg	V_{DS}=30V, V_{GS}=10V, I_D=3A		10		nC
Gate to Source Charge	Qgs			1.6		nC
Gate to Drain “Miller” Charge	Qgd			2.1		nC
Forward Diode Voltage	V_{SD}	I_S=3A, V_{GS}=0V		0.81	1.2	V
[P-Channel]						
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−60V, V_{GS}=0V			−1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transconductance	g_{FS}	V_{DS}=−10V, I_D=−1.5A		3.9		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=−1.5A, V_{GS}=−10V		105	137	mΩ
	$R_{DS}(on)2$	I_D=−0.75A, V_{GS}=−4.5V		128	180	mΩ
	$R_{DS}(on)3$	I_D=−0.75A, V_{GS}=−4V		138	194	mΩ
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		420		pF
Output Capacitance	Coss			54		pF
Reverse Transfer Capacitance	Crss			44		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		6.4		ns
Rise Time	t_r			9.8		ns
Turn-OFF Delay Time	$t_d(off)$			65		ns
Fall Time	t_f			36		ns
Total Gate Charge	Qg	V_{DS}=−30V, V_{GS}=−10V, I_D=−2.5A		11		nC
Gate to Source Charge	Qgs			1.4		nC
Gate to Drain “Miller” Charge	Qgd			2		nC
Forward Diode Voltage	V_{SD}	I_S=−2.5A, V_{GS}=0V		−0.83	−1.2	V

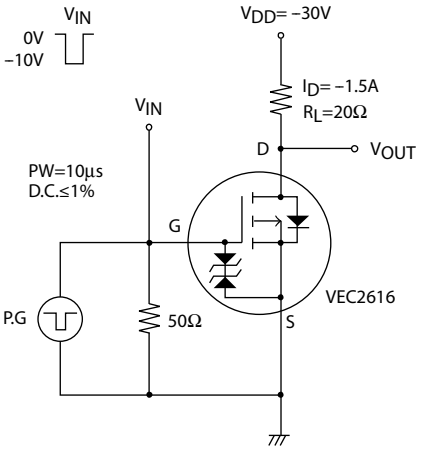
Note 2 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

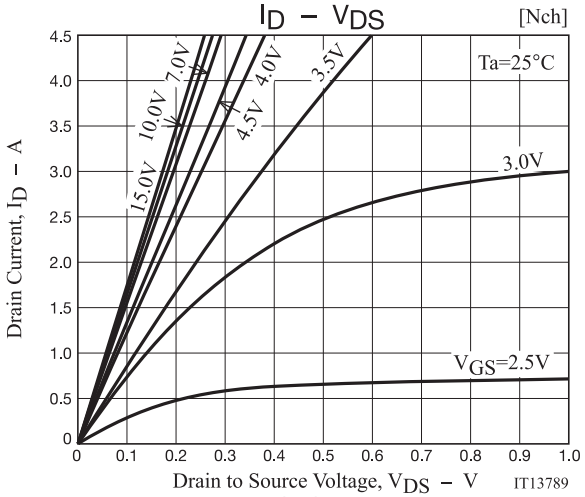
Switching Time Test Circuit

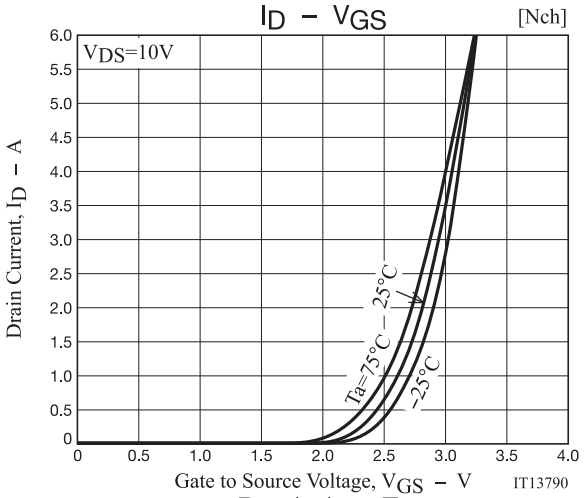
[N-Channel]

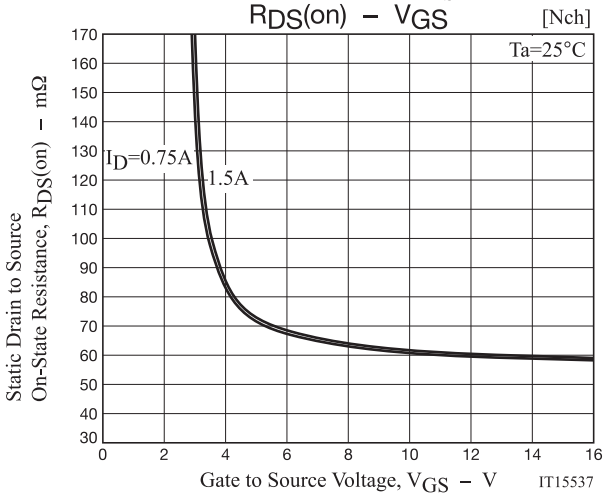


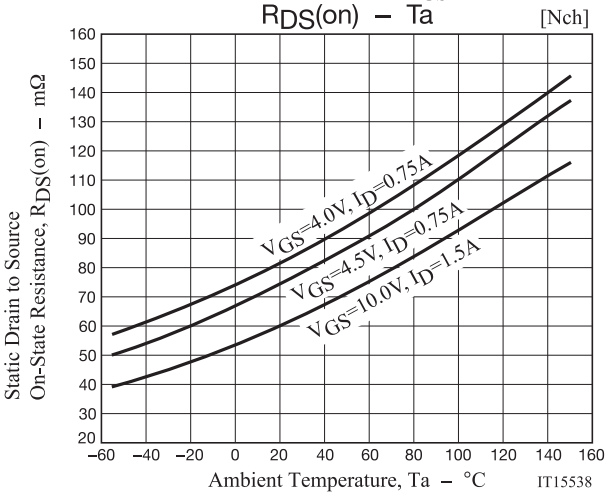
[P-Channel]

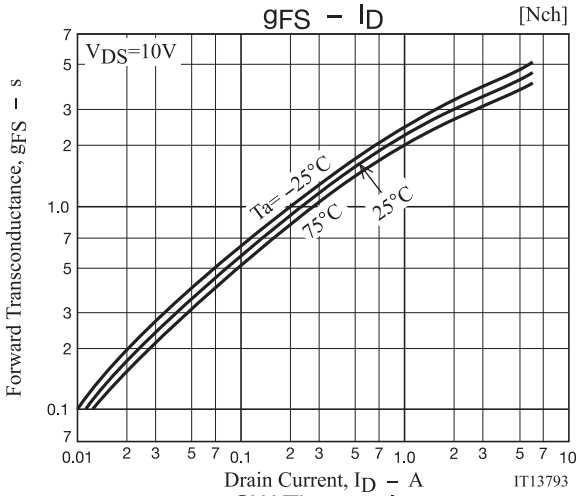


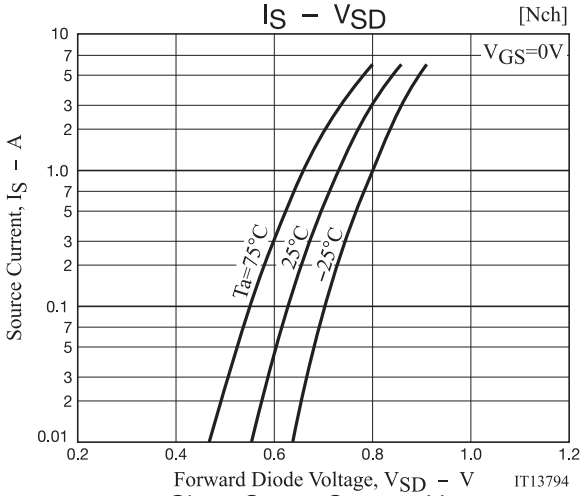


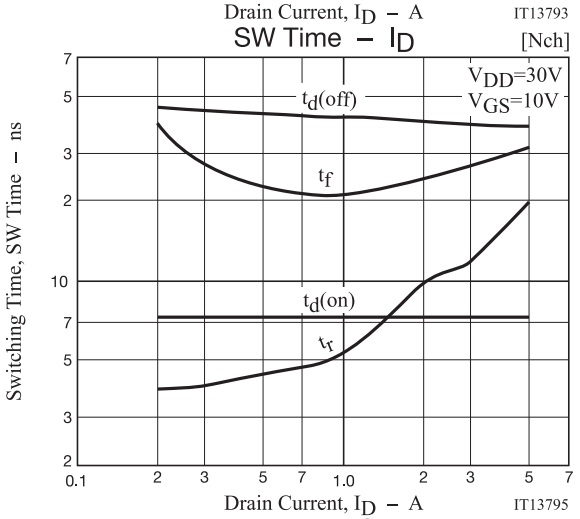


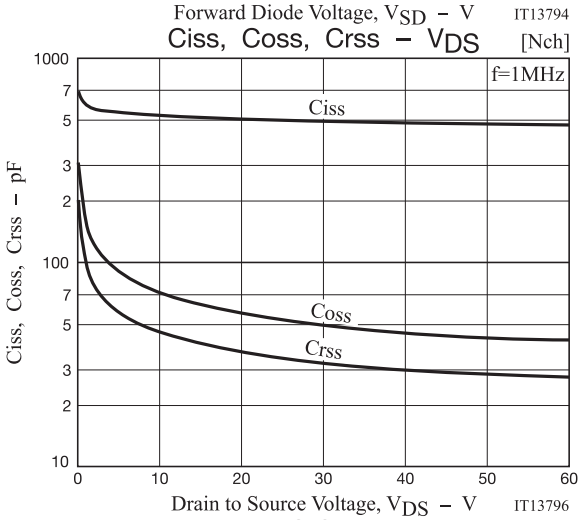


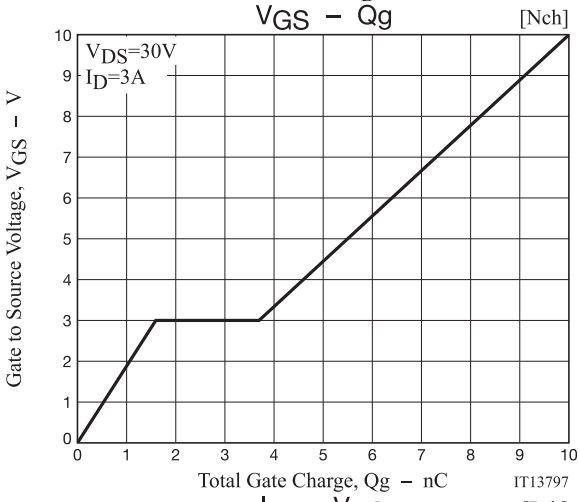


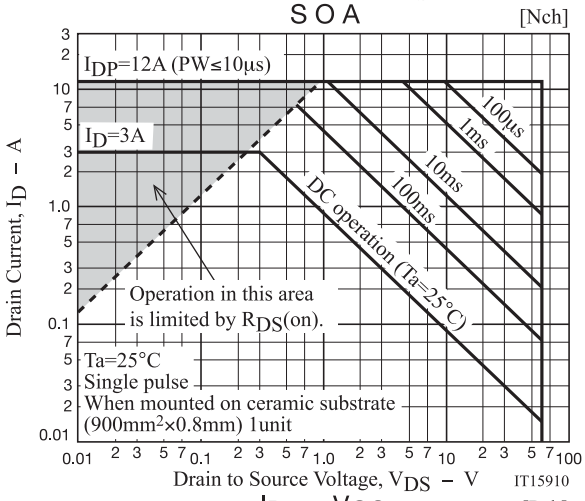


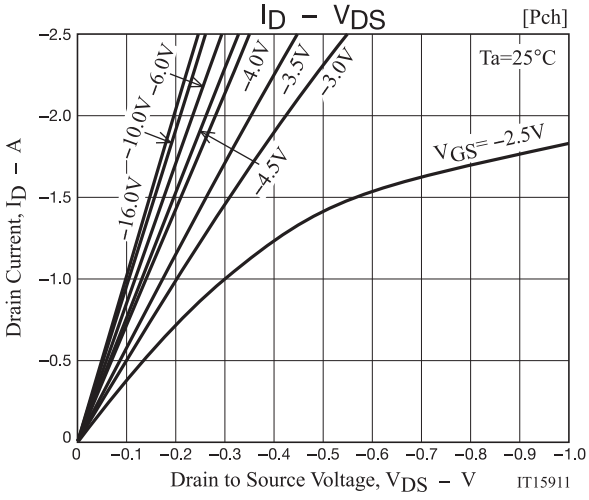


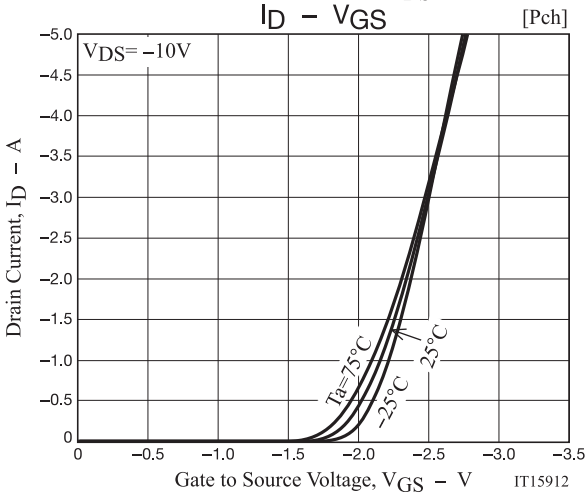


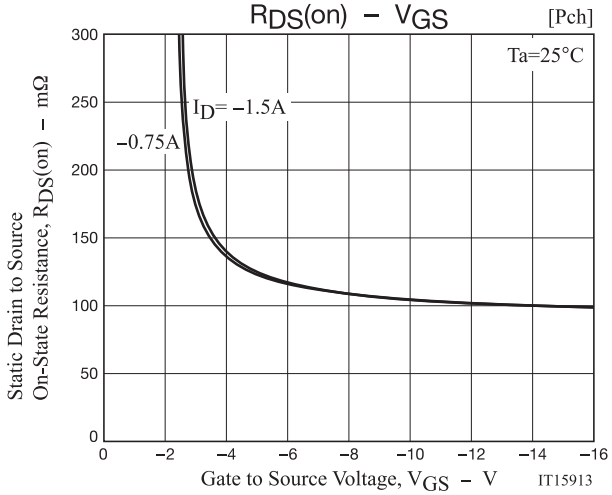


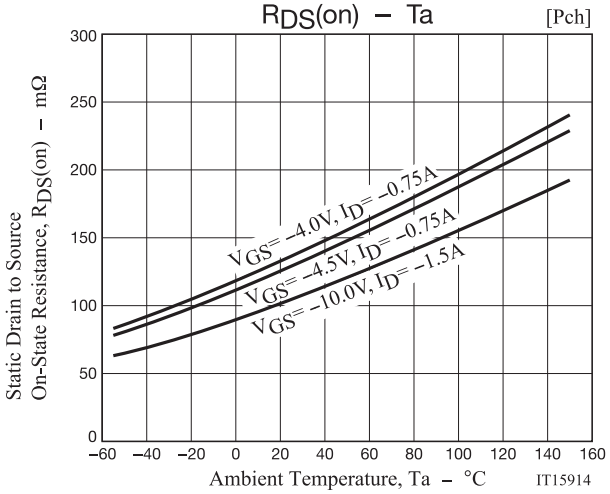


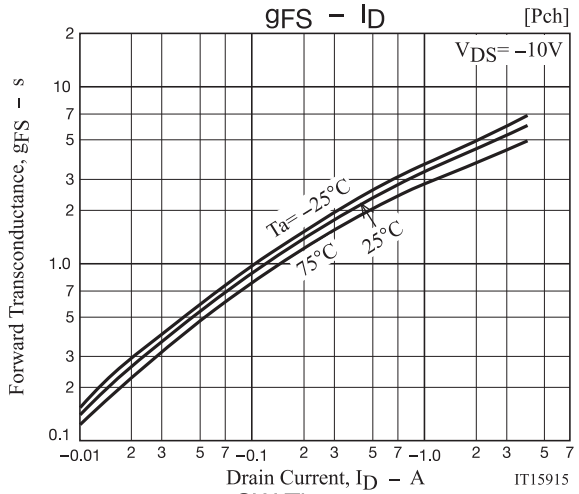


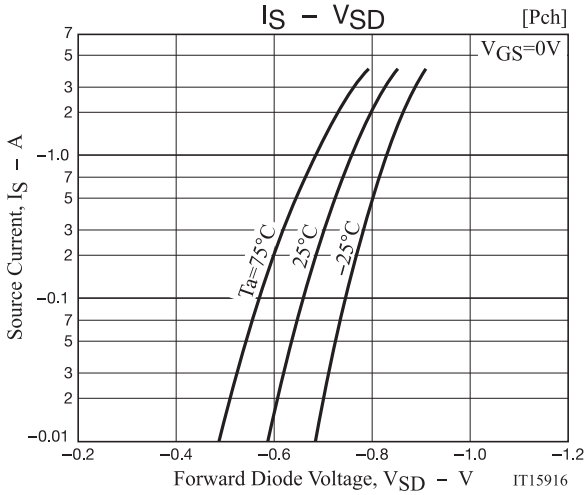


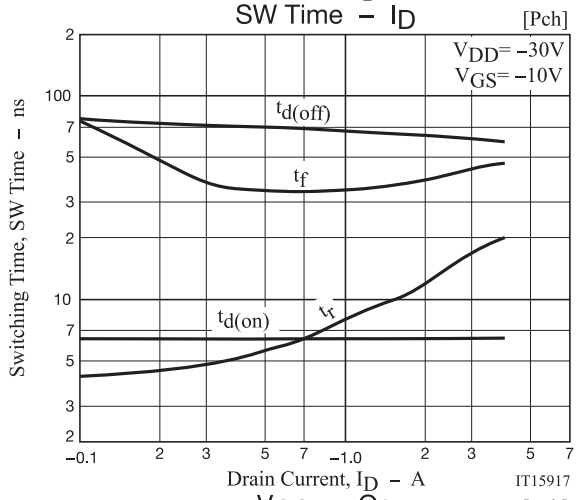


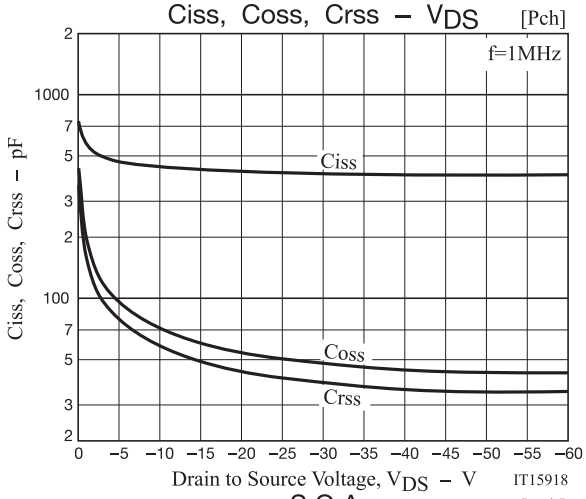


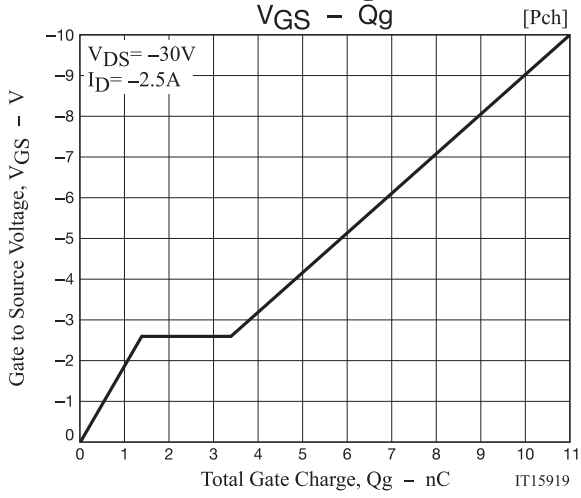


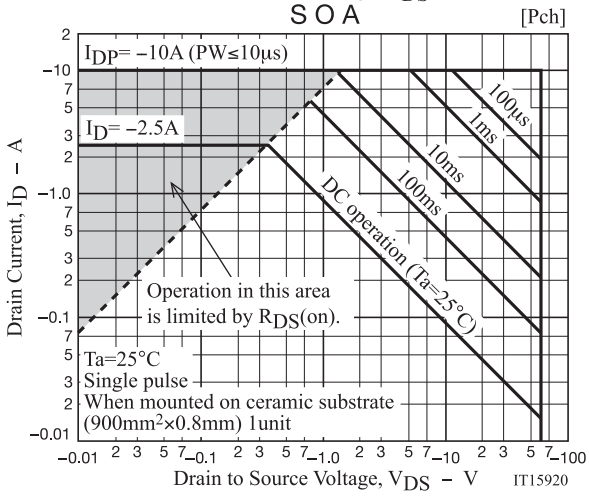


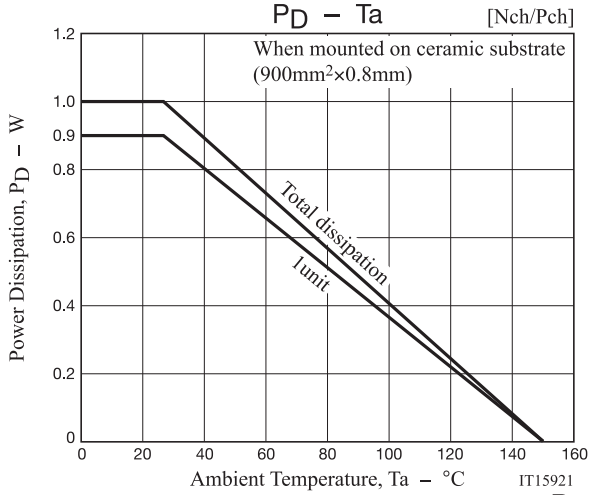


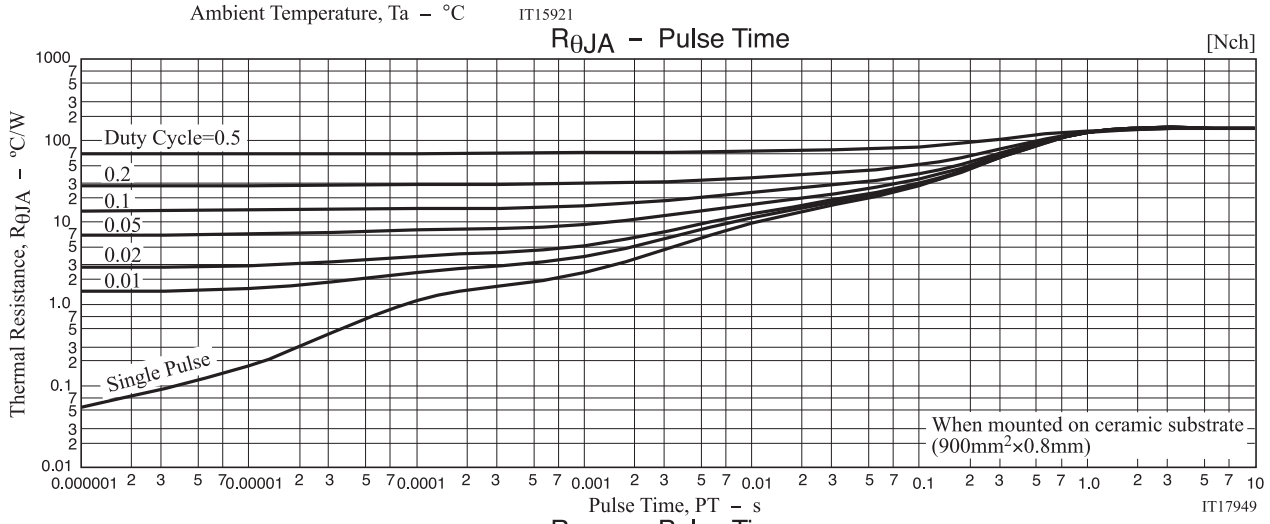


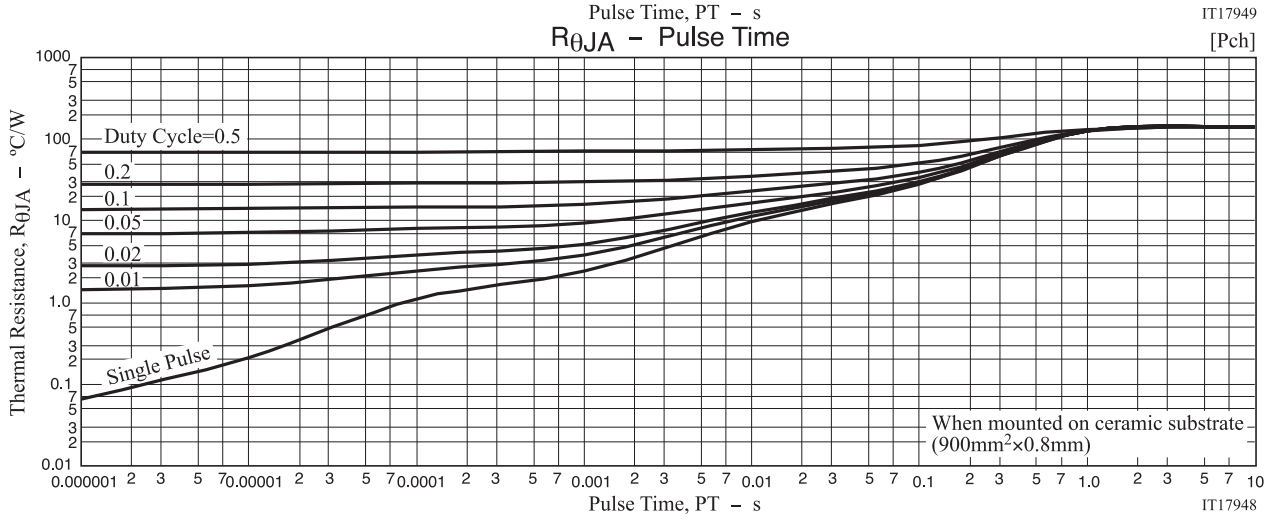








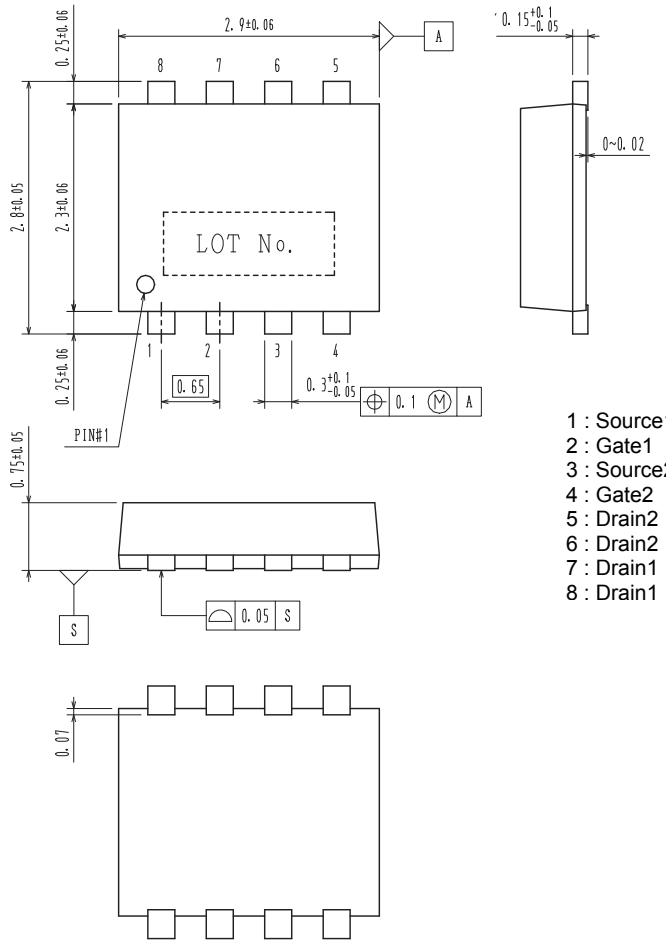




PACKAGE DIMENSIONS

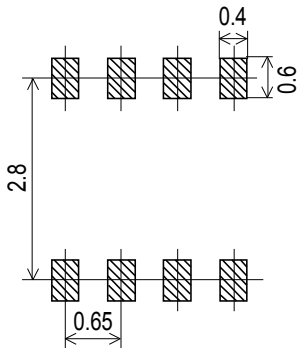
unit : mm

SOT-28FL / VEC8
CASE 318AH
ISSUE O



1 : Source1
2 : Gate1
3 : Source2
4 : Gate2
5 : Drain2
6 : Drain2
7 : Drain1
8 : Drain1

Recommended Soldering Footprint



ORDERING INFORMATION

Device	Marking	Package	Shipping (Qty / Packing)
VEC2616-TL-H	UP	SOT-28FL / VEC8 (Pb-Free / Halogen Free)	3,000 / Tape & Reel
VEC2616-TL-W			

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF

Note on usage : Since the VEC2616 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.