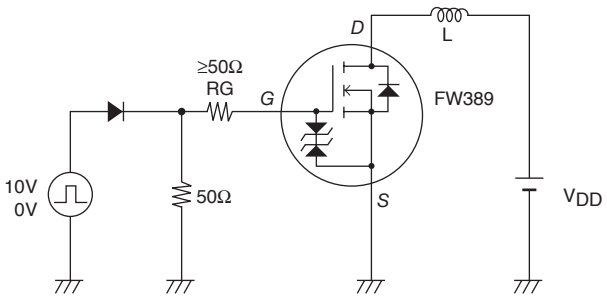
Continued from preceding page

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
N-channel]						
Total Gate Charge	Qg	V_{DS}=50V, V_{GS}=10V, I_D=2A		10		nC
Gate-to-Source Charge	Qgs			1.4		nC
Gate-to-Drain “Miller” Charge	Qgd			2.1		nC
Diode Forward Voltage	V_{SD}	I_S=2A, V_{GS}=0V		0.78	1.2	V
Gata Resistance	Rg	V_{DS}=0V, V_{GS}=0V, f=1MHz	0		12	Ω
[P-channel]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−100V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−2A		4.7		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−2A, V_{GS}=−10V		230	300	mΩ
	R_{DS}(on)2	I_D=−1A, V_{GS}=−4.5V		240	336	mΩ
	R_{DS}(on)3	I_D=−1A, V_{GS}=−4V		250	355	mΩ
Input Capacitance	Ciss	V_{DS}=−20V, f=1MHz		1000		pF
Output Capacitance	Coss			77		pF
Reverse Transfer Capacitance	Crss			47		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		12		ns
Rise Time	t_r			16		ns
Turn-OFF Delay Time	t_d(off)			110		ns
Fall Time	t_f			40		ns
Total Gate Charge	Qg	V_{DS}=−50V, V_{GS}=−10V, I_D=−2A		21		nC
Gate-to-Source Charge	Qgs			2.8		nC
Gate-to-Drain “Miller” Charge	Qgd			4.4		nC
Diode Forward Voltage	V_{SD}	I_S=−2A, V_{GS}=0V		−0.79	−1.2	V
Gata Resistance	Rg	V_{DS}=0V, V_{GS}=0V, f=1MHz	0		50	Ω

Fig.1 Unclamped Inductive Switching Test Circuit

[N-channel]



[P-channel]

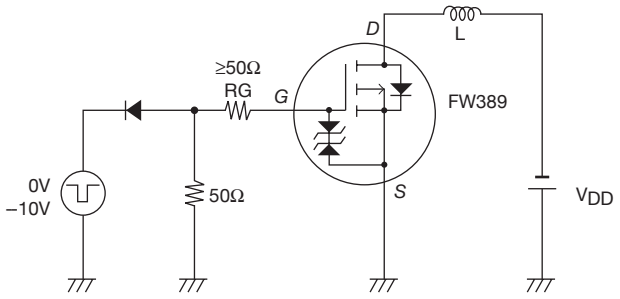


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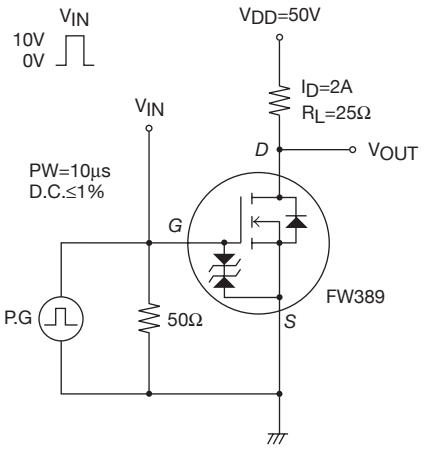
Fig.2 Switching Time Test Circuit

[N-channel]



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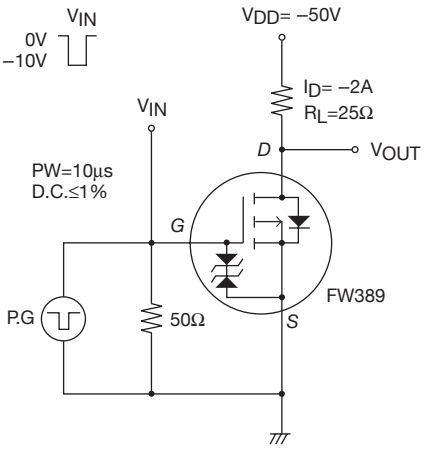

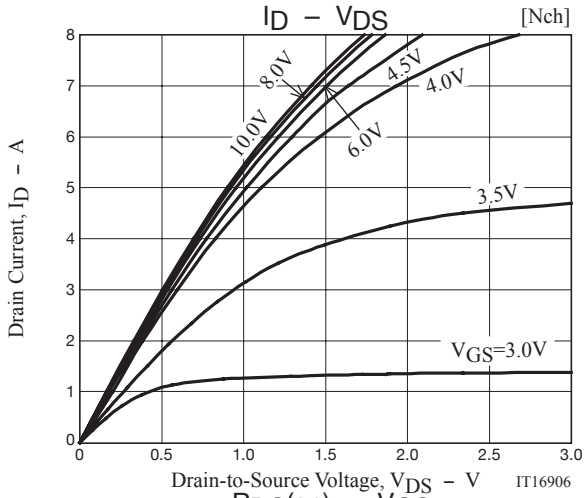

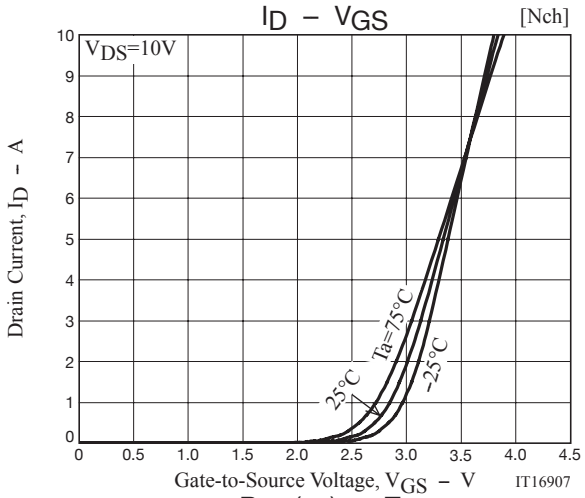

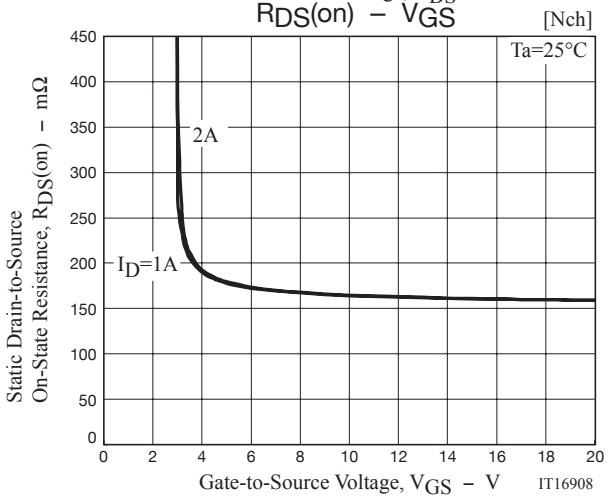

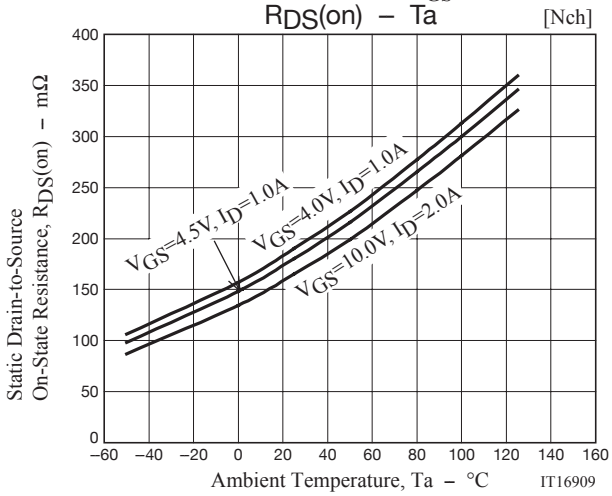

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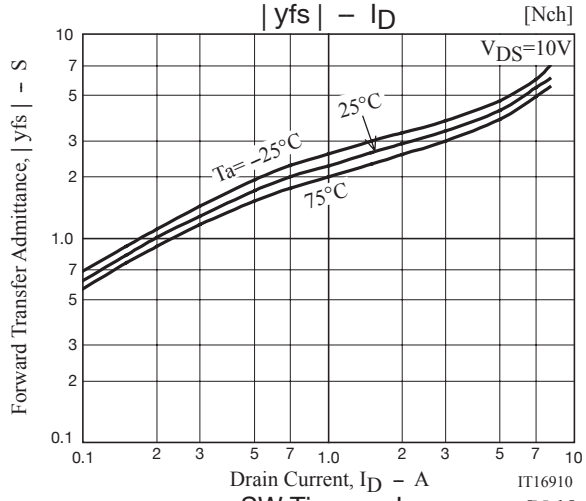

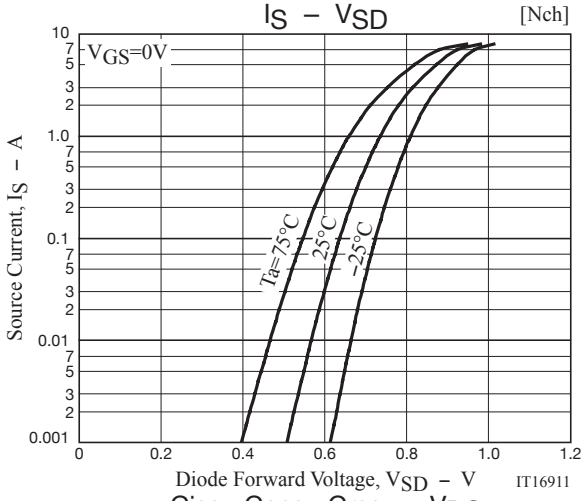

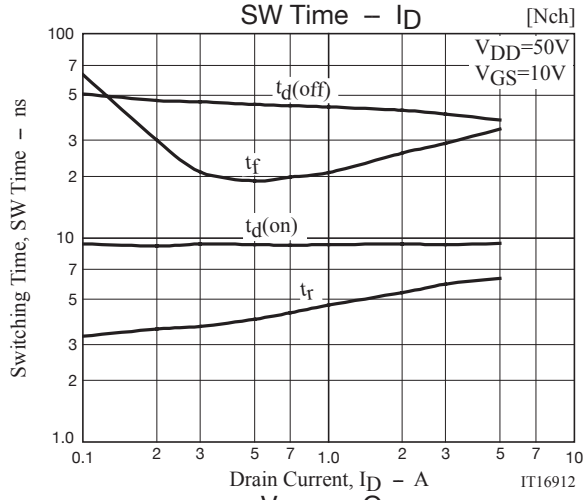

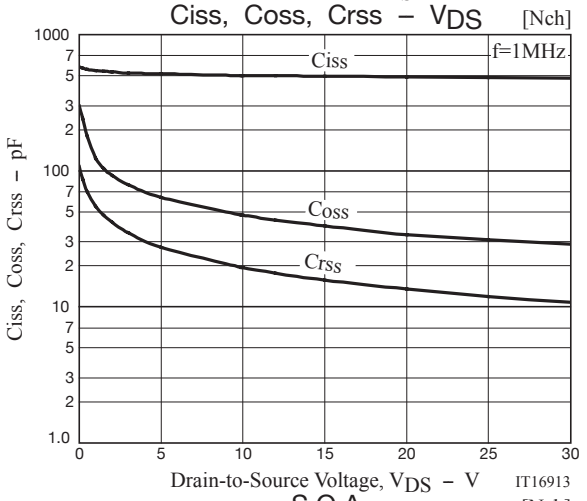

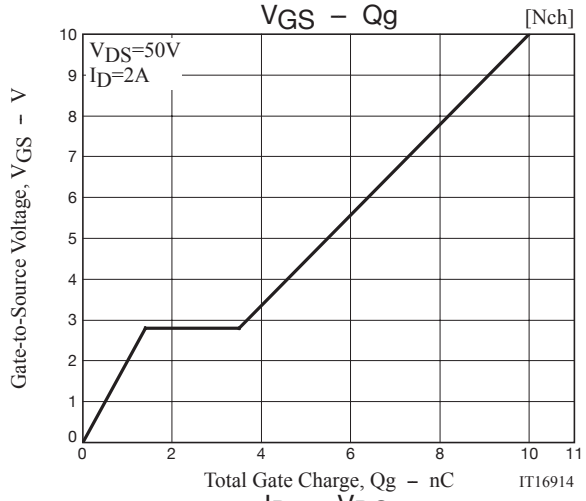

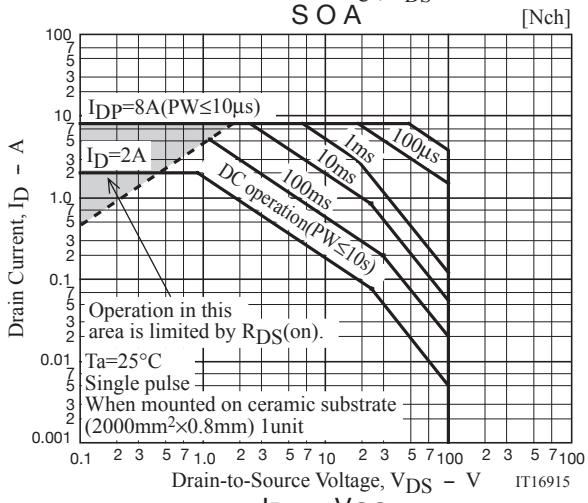

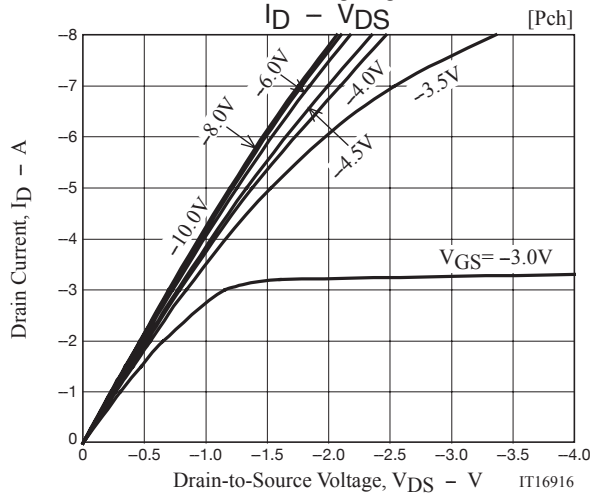

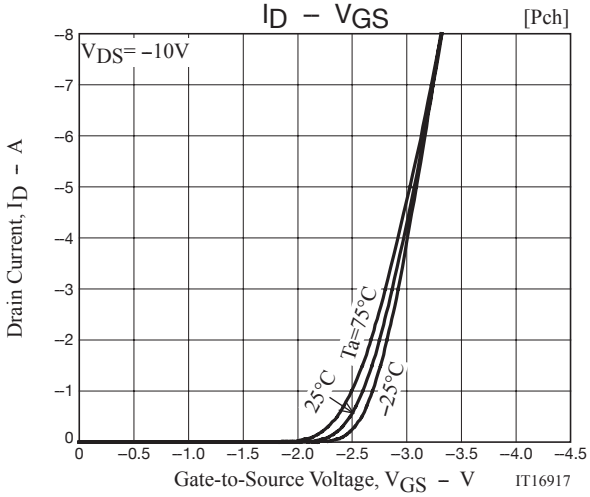

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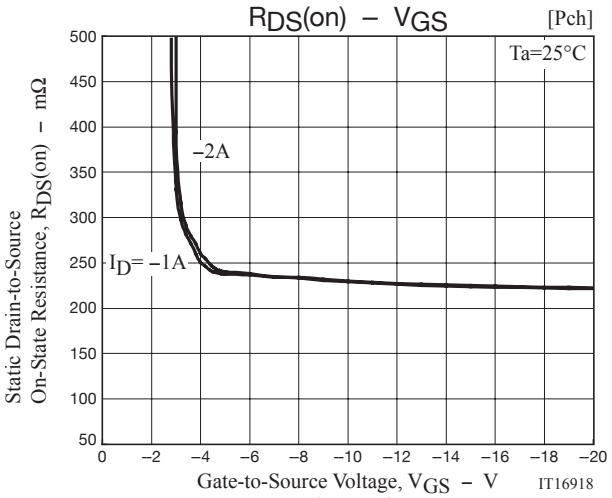

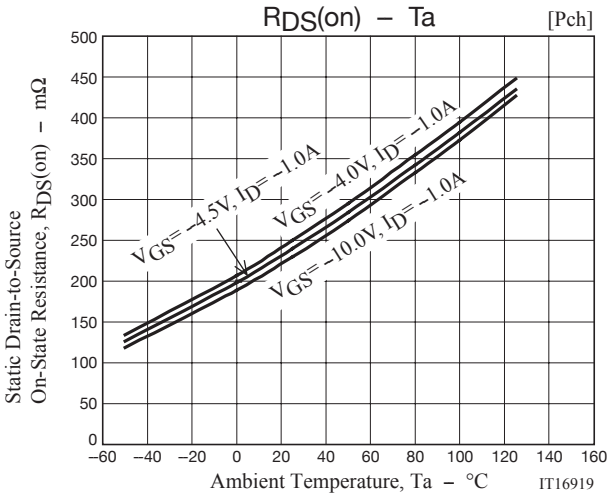

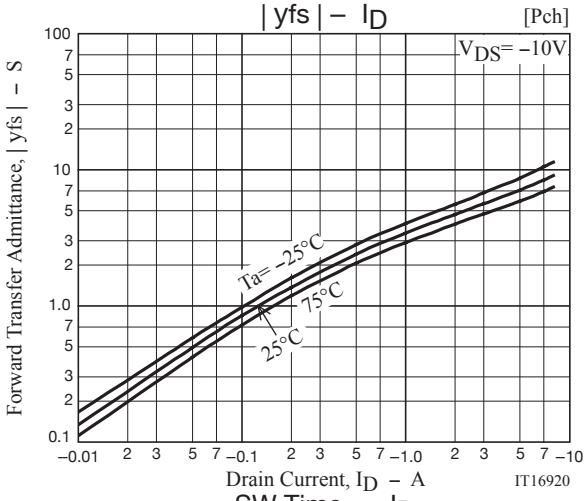

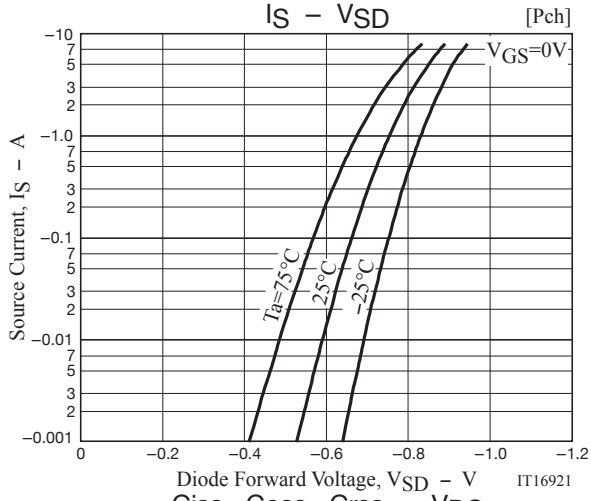

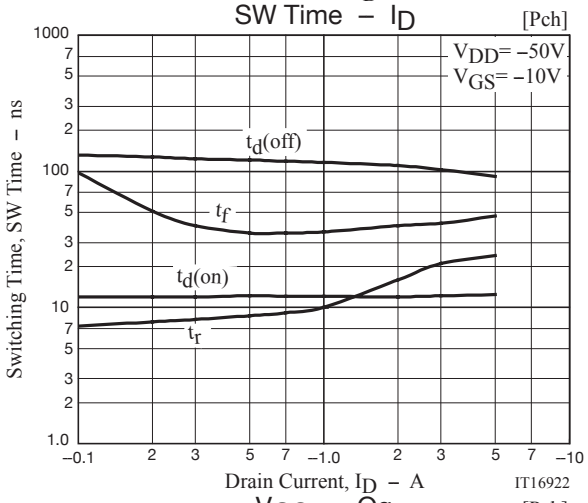

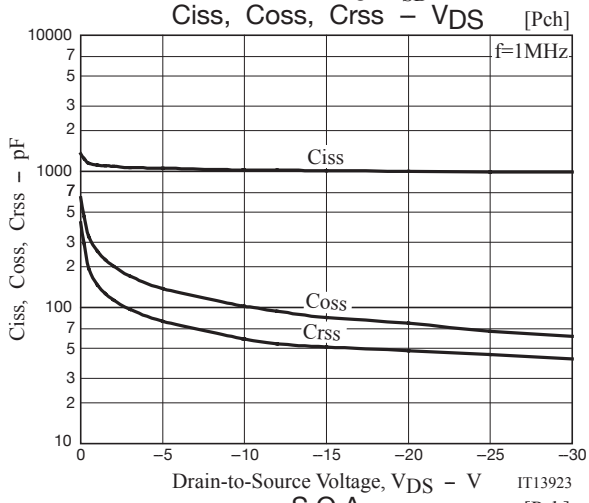

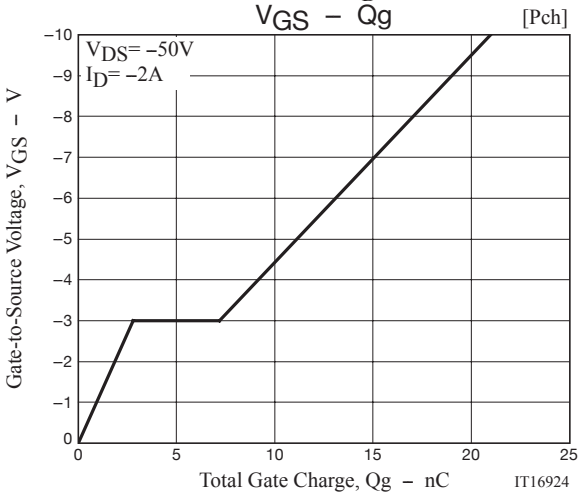

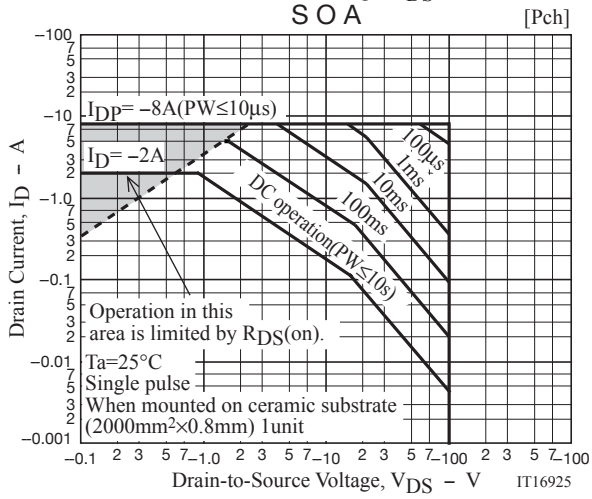

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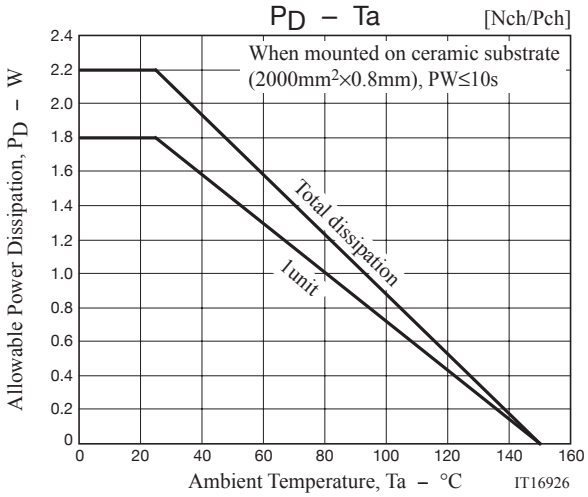

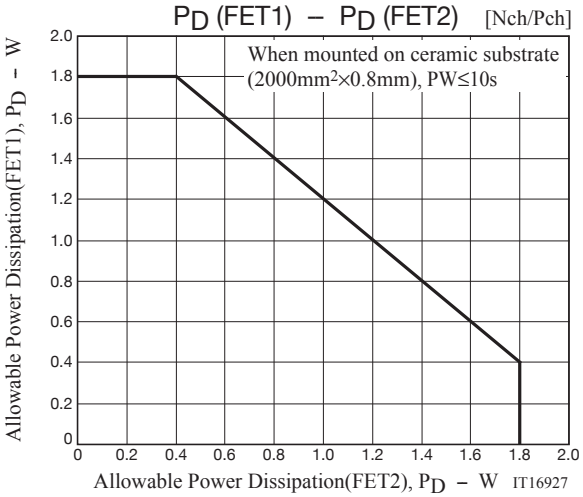

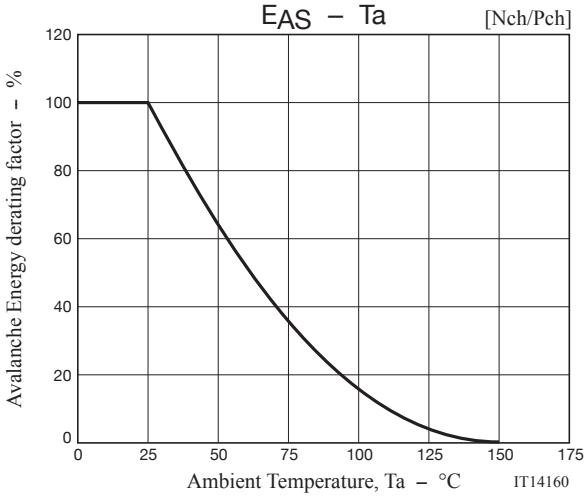

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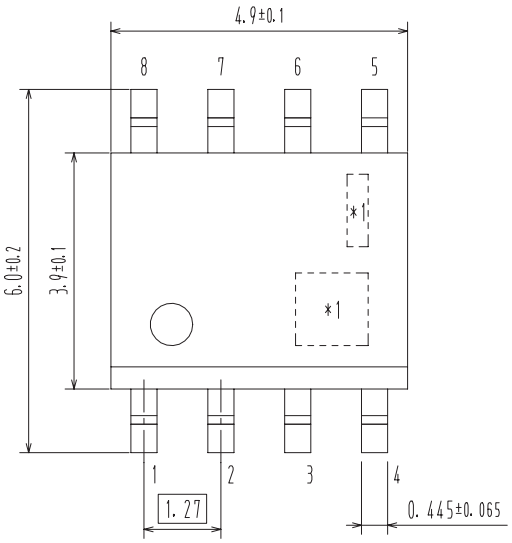
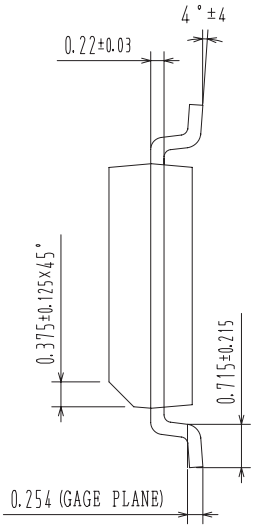
Package Dimensions

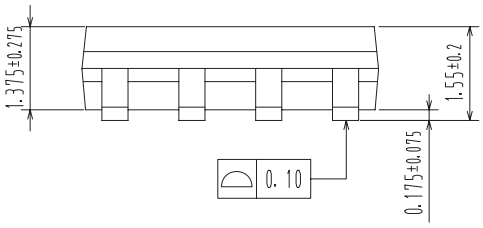
FW389-TL-2W

SOIC-8
CASE 751CR
ISSUE O
unit : mm

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



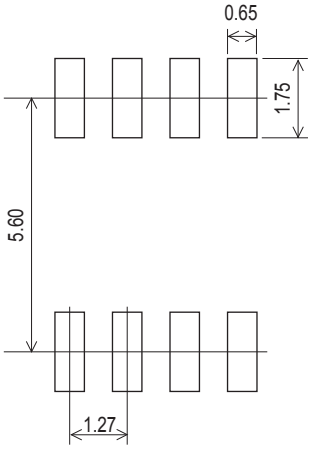




*1:Lot Indication.

*2:Lot Indication. Some products have no Lot indication.

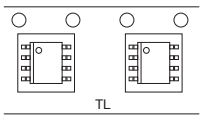
Land Pattern Example



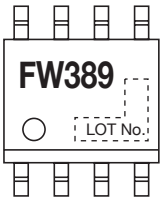
Ordering & Package Information

Device	Package	Shipping	note
FW389-TL-2W	SOIC8, SC-87, SOT-96	2,500 pcs. / reel	Pb-Free and Halogen Free

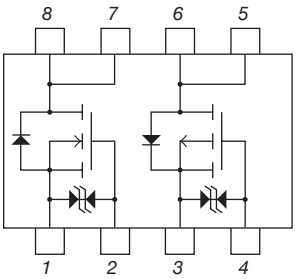
Packing Type:TL



Marking



Electrical Connection



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Note on usage : Since the FW389 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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