



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## N-Channel Silicon MOSFET FW216A — General-Purpose Switching Device Applications

### Features

- ON-resistance  $N_{ch} : R_{DS(on)1} = 49m\Omega$  (typ.)
- 4.0V drive
- Halogen free compliance

### Specifications

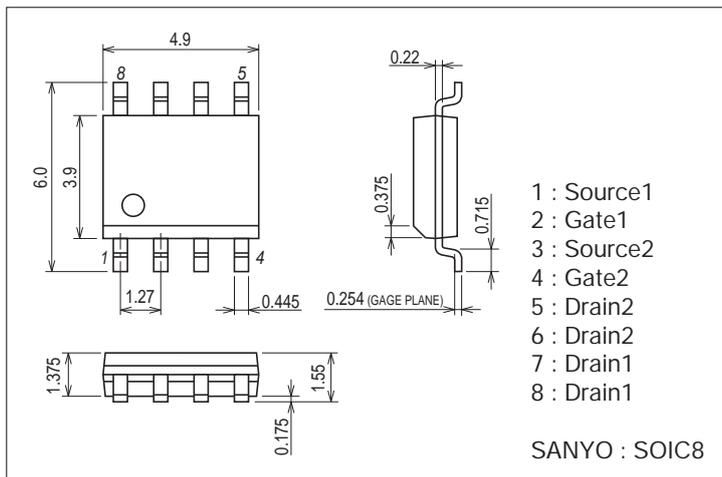
Absolute Maximum Ratings at  $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		35	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		4.5	A
Drain Current ( $PW \leq 10\mu s$ )	$I_{DP}$	Duty cycle $\leq 1\%$	18	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (2000mm <sup>2</sup> x 0.8mm) 1unit, $PW \leq 10s$	1.6	W
Total Dissipation	$P_T$	When mounted on ceramic substrate (2000mm <sup>2</sup> x 0.8mm), $PW \leq 10s$	2.2	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

### Package Dimensions

unit : mm (typ)

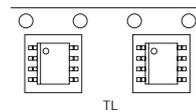
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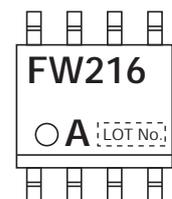
### Product & Package Information

- Package : SOIC8
- JEITA, JEDEC : SC-87, SOT96
- Minimum Packing Quantity : 2,500 pcs./reel

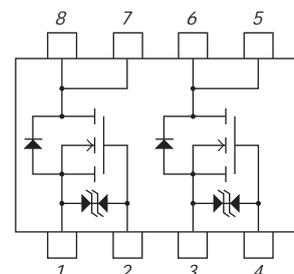
Packing Type : TL



Marking



### Electrical Connection

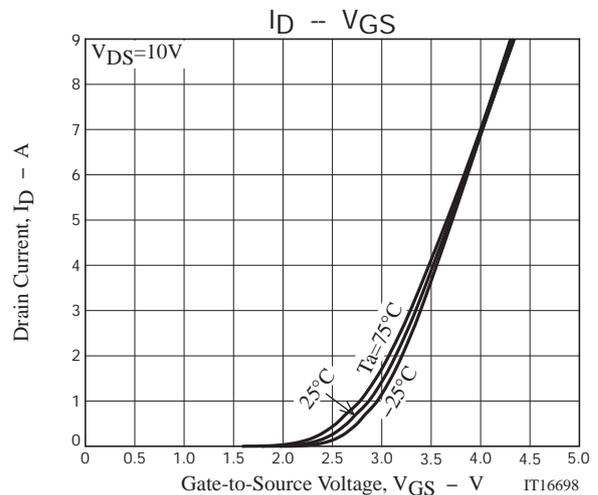
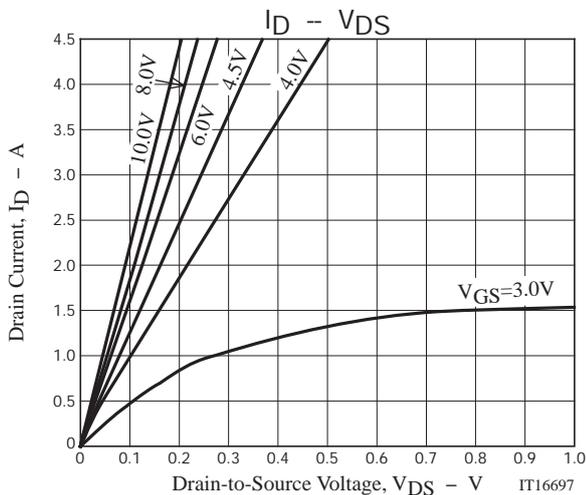
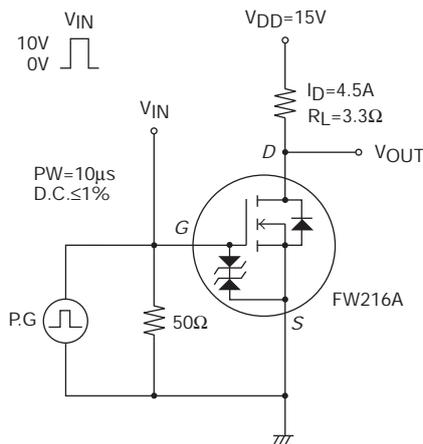


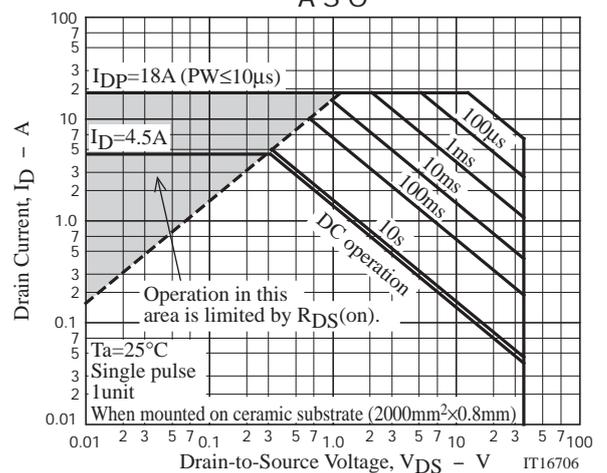
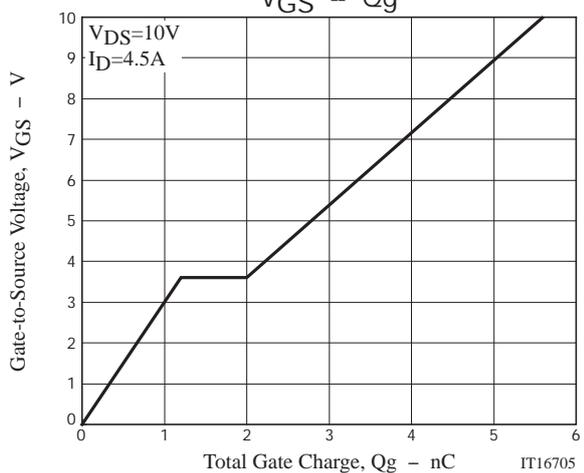
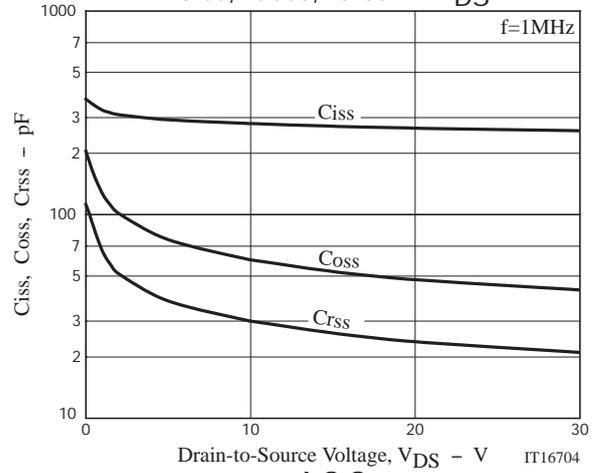
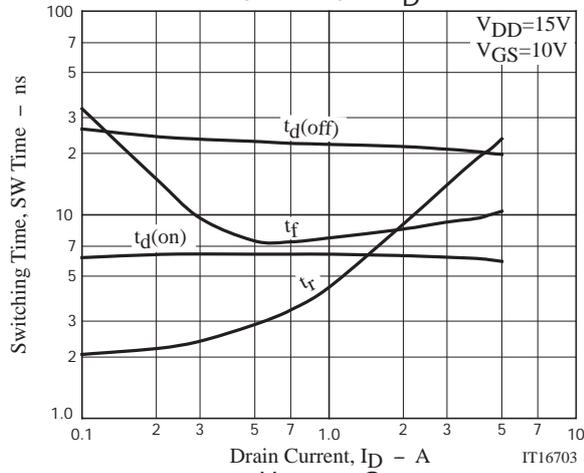
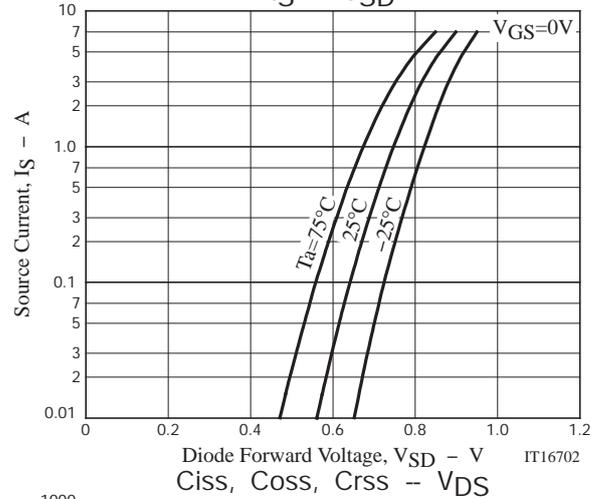
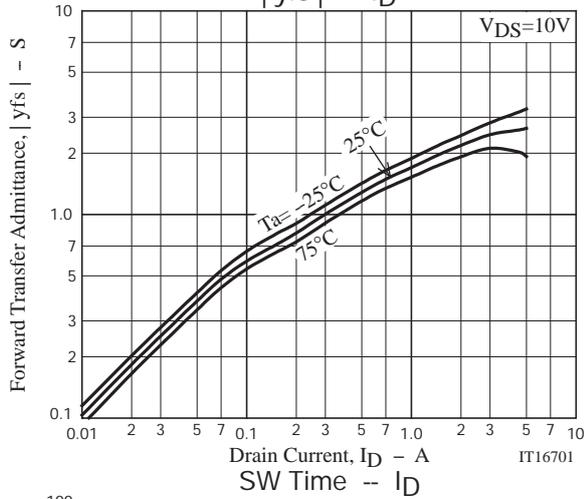
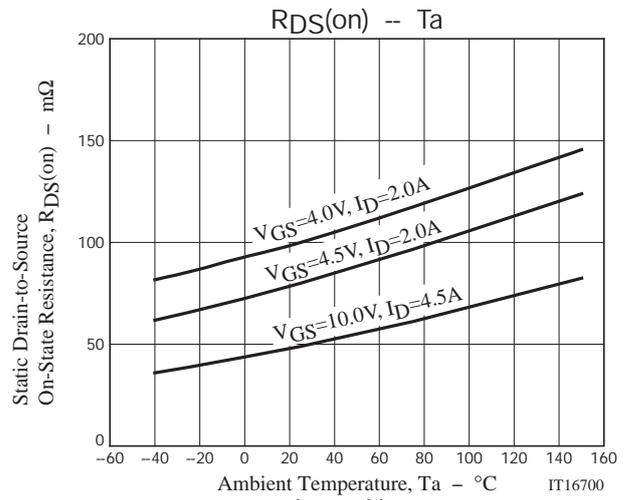
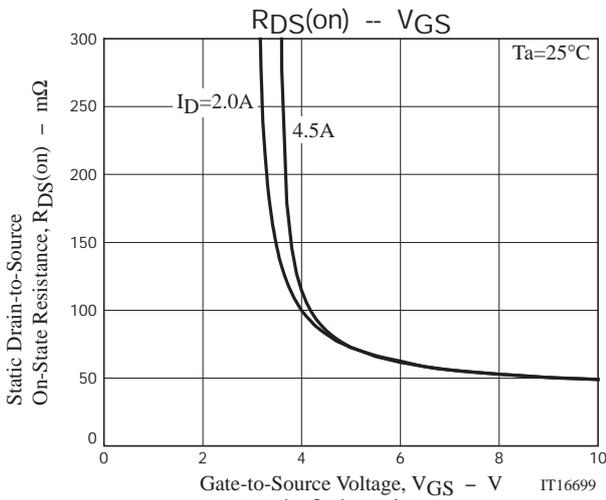
# FW216A

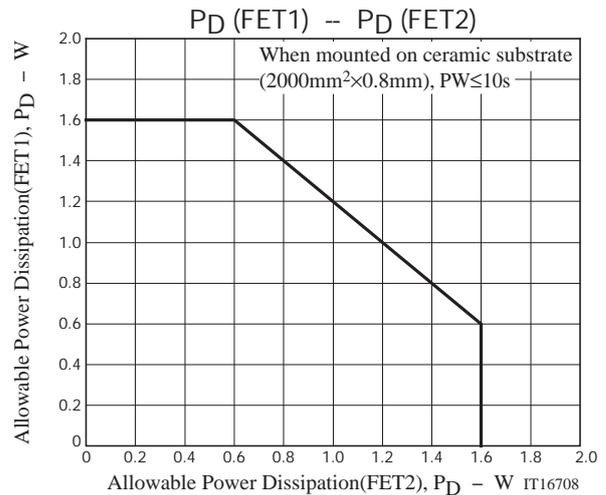
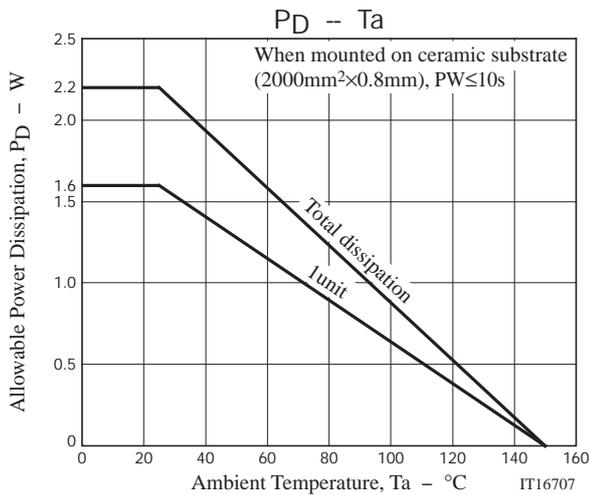
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	35			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=35V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.5		2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=4.5A$		2.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=4.5A, V_{GS}=10V$		49	64	$m\Omega$
	$R_{DS(on)2}$	$I_D=2A, V_{GS}=4.5V$		80	112	$m\Omega$
	$R_{DS(on)3}$	$I_D=2A, V_{GS}=4.0V$		100	140	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		280		pF
Output Capacitance	$C_{oss}$			60		pF
Reverse Transfer Capacitance	$C_{rss}$			30		pF
Turn-ON Delay Time	$t_d(on)$		See specified Test Circuit.		6	
Rise Time	$t_r$			21		ns
Turn-OFF Delay Time	$t_d(off)$			20		ns
Fall Time	$t_f$			10		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=4.5A$			5.6	
Gate-to-Source Charge	$Q_{gs}$			1.2		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			0.8		nC
Diode Forward Voltage	$V_{SD}$	$I_S=4.5A, V_{GS}=0V$		0.85	1.2	V

### Switching Time Test Circuit







Note on usage : Since the FW216A is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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