



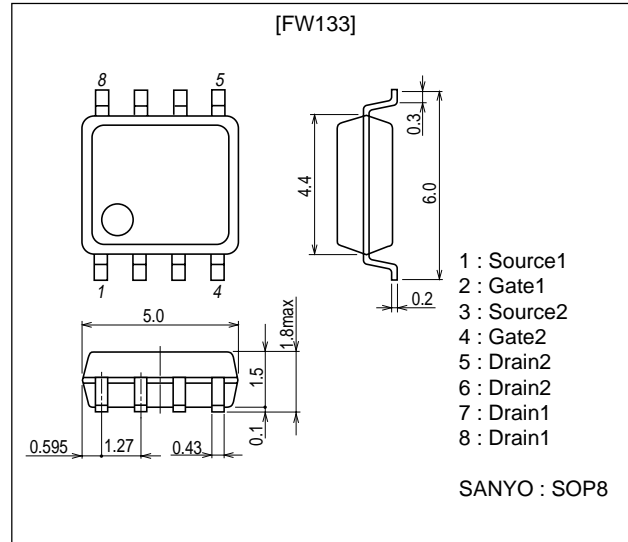
## Load Switching Applications

### Features

- 4V drive.
- Low ON-resistance.

### Package Dimensions

unit : mm  
2129



### Specifications

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-7	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P <sub>D</sub>	Mounted on a ceramic board (1000mm²×0.8mm) 1unit	1.7	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (1000mm²×0.8mm)	2.0	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Electrical Characteristics

 at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-7A	8.4	12		S

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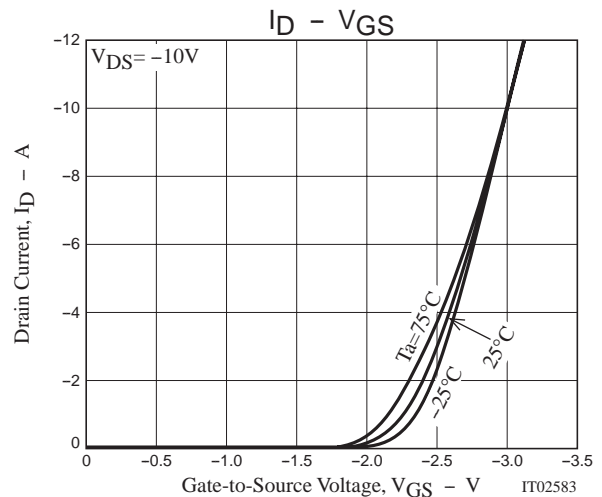
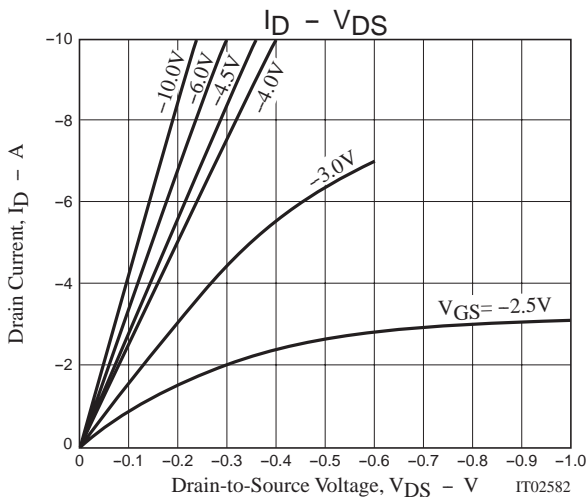
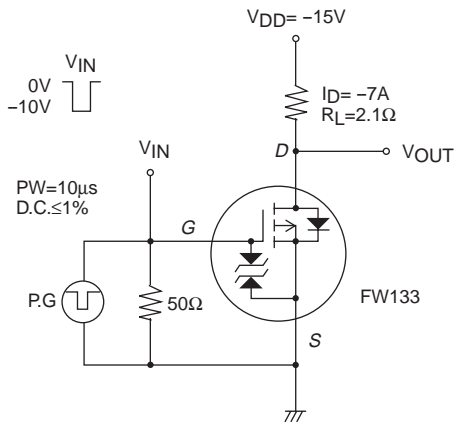
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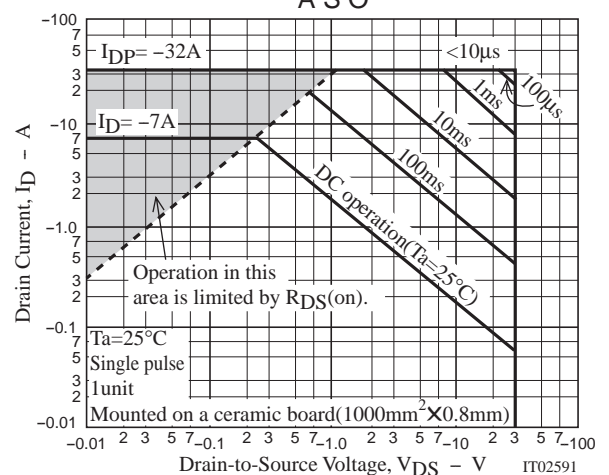
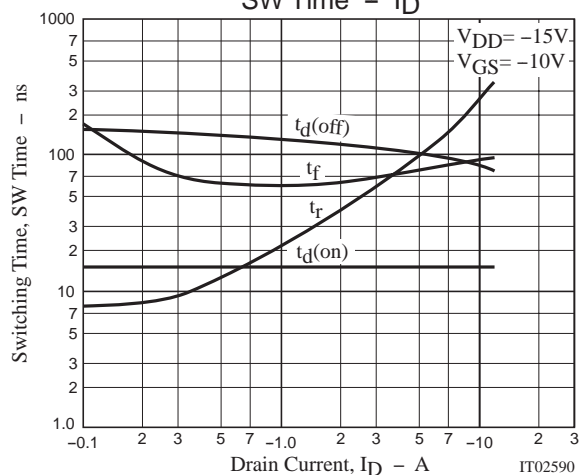
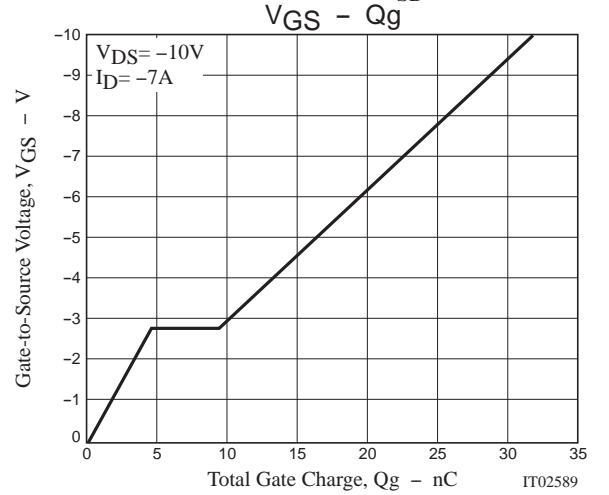
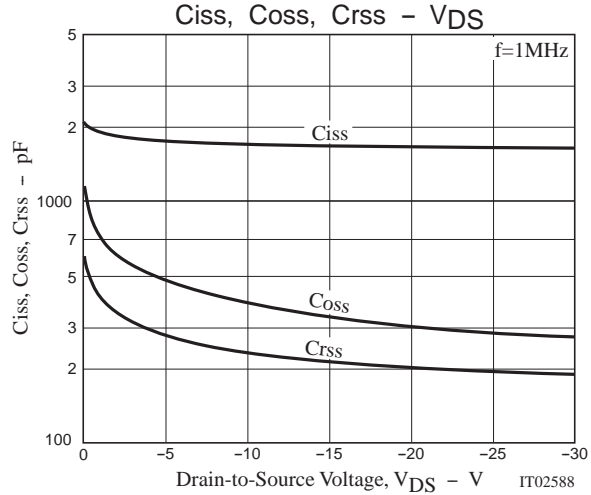
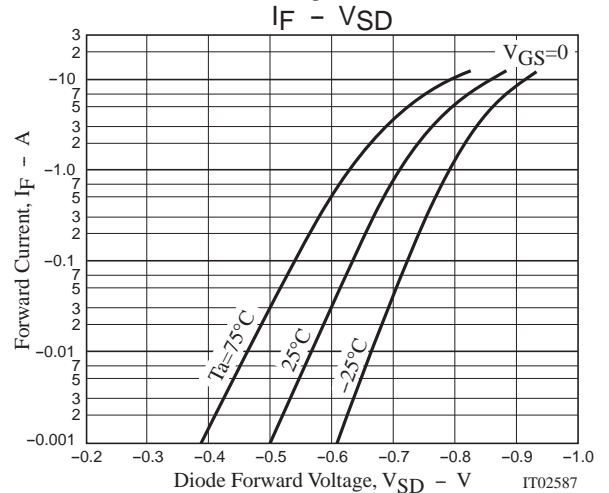
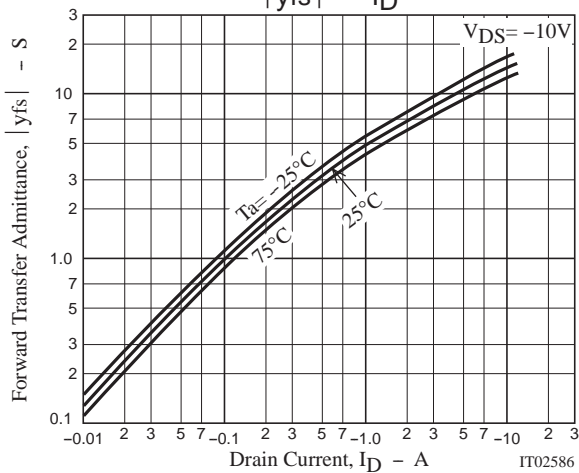
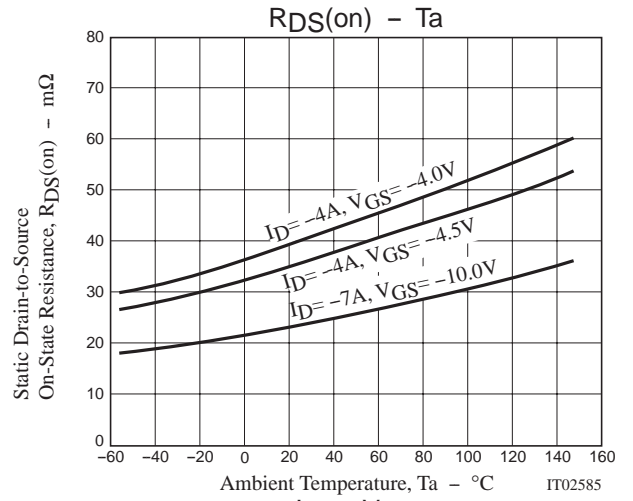
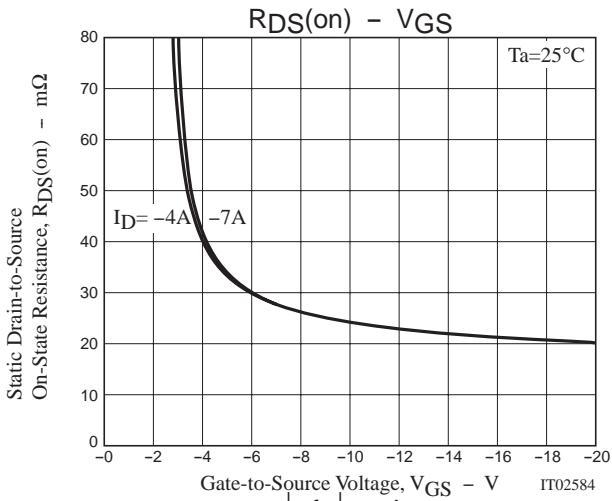
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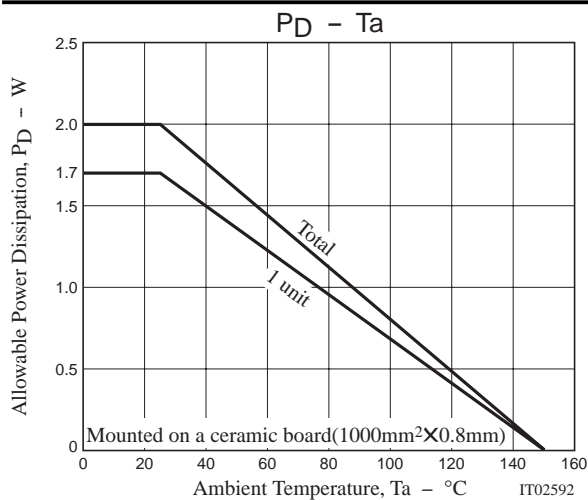
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -7A, V_{GS} = -10V$		24	32	$m\Omega$
	$R_{DS(on)2}$	$I_D = -4A, V_{GS} = -4.5V$		36	51	$m\Omega$
	$R_{DS(on)3}$	$I_D = -4A, V_{GS} = -4V$		40	56	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		1700		$pF$
Output Capacitance	$C_{oss}$	$V_{DS} = -10V, f = 1MHz$		380		$pF$
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10V, f = 1MHz$		240		$pF$
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		15		ns
Rise Time	$t_r$	See specified Test Circuit		150		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		85		ns
Fall Time	$t_f$	See specified Test Circuit		90		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -7A$		32		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -7A$		4.5		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -7A$		5		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -7A, V_{GS} = 0$		-1.0	-1.5	V

## Switching Time Test Circuit







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