



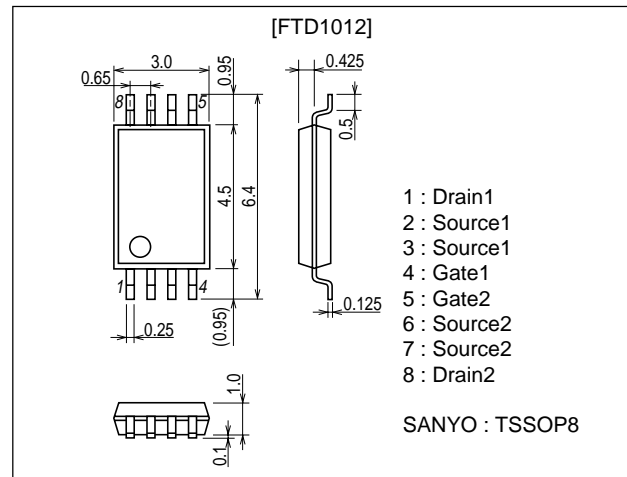
## Load Switching Applications

### Features

- Low ON-resistance.
- 4V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

### Package Dimensions

unit : mm  
2155A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-30	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-3	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-15	A
Allowable Power Dissipation	$P_D$	Mounted on a ceramic board (1000mm <sup>2</sup> X0.8mm) 1unit	0.8	W
Total Dissipation	$P_T$	Mounted on a ceramic board (1000mm <sup>2</sup> X0.8mm)	1.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$ , $V_{GS} = 0$	-30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30V$ , $V_{GS} = 0$			-1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$ , $I_D = -1mA$	-1.0		-2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$ , $I_D = -3A$	3.8	5.5		S

Marking : D1012

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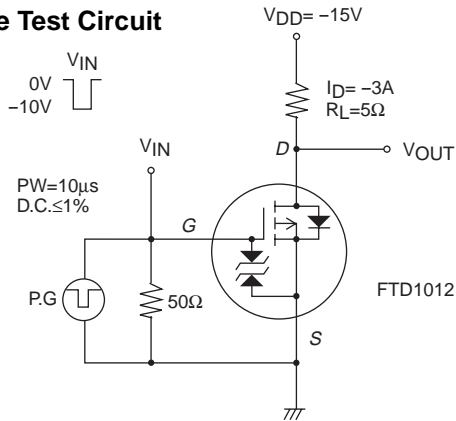
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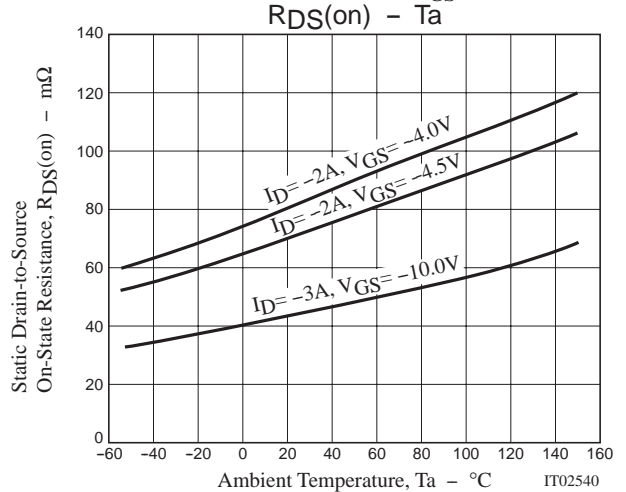
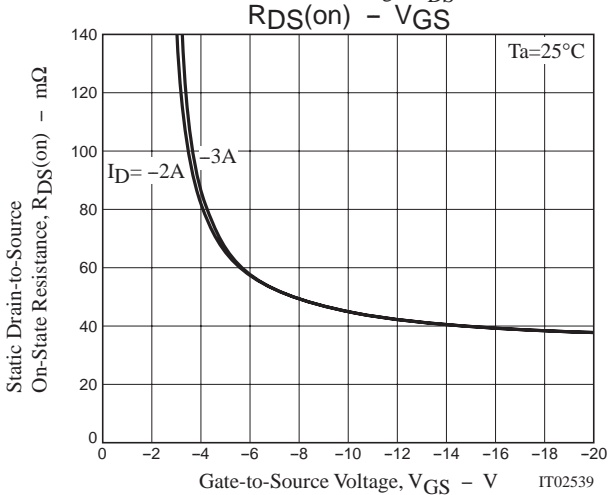
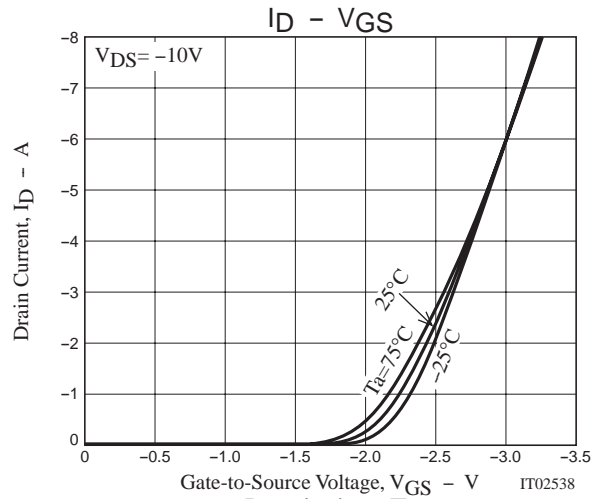
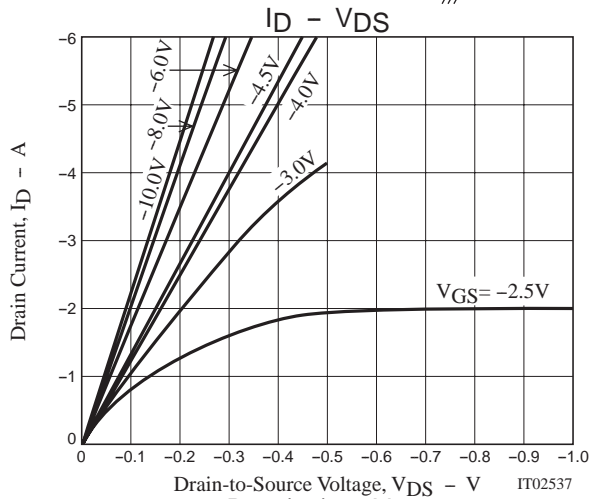
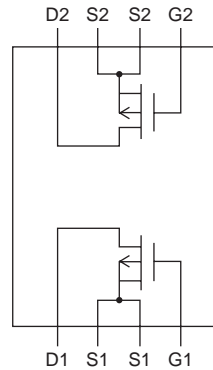
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	R <sub>DS(on) 1</sub>	I <sub>D</sub> =-3A, V <sub>GS</sub> =-10V		50	65	mΩ
	R <sub>DS(on) 2</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-4.5V		80	110	mΩ
	R <sub>DS(on) 3</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-4V		85	120	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		1000		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		250		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		160		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit		10		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit		30		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit		55		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit		50		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-3A		19		nC
Gate-to-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-3A		2		nC
Gate-to-Drain "Miller" Charge	Q <sub>gd</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-3A		4		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-3A, V <sub>GS</sub> =0		-1.0	-1.5	V

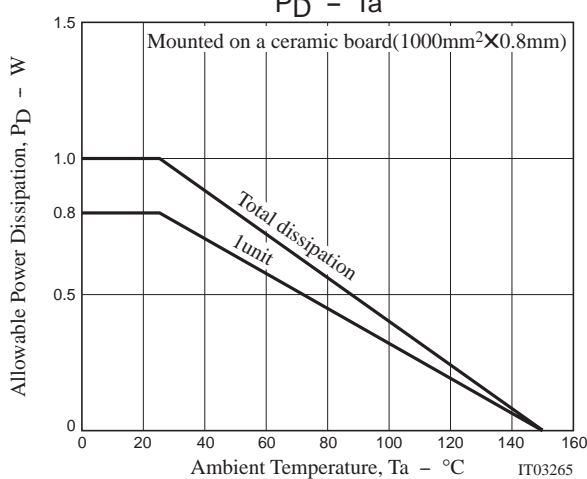
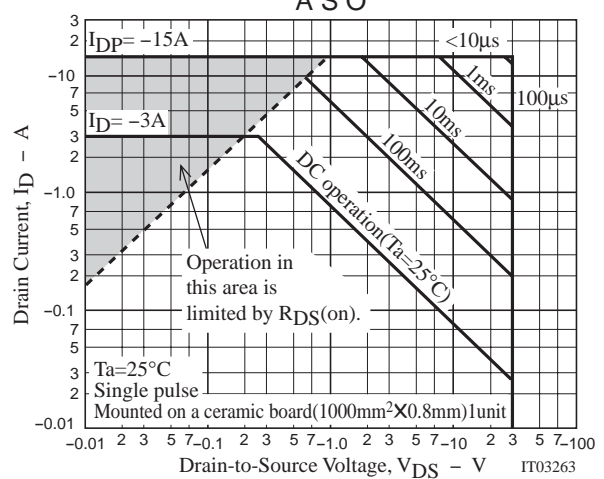
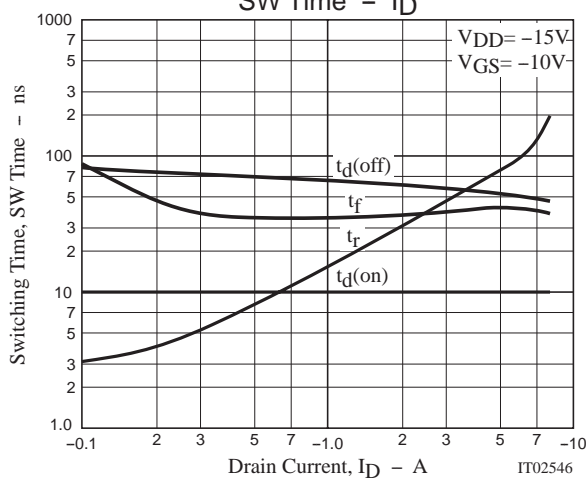
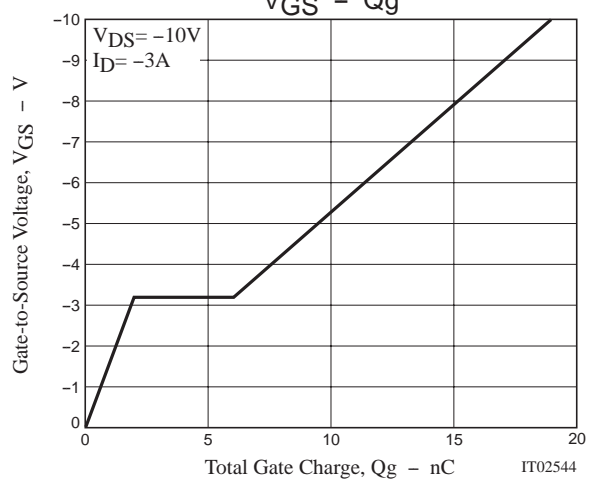
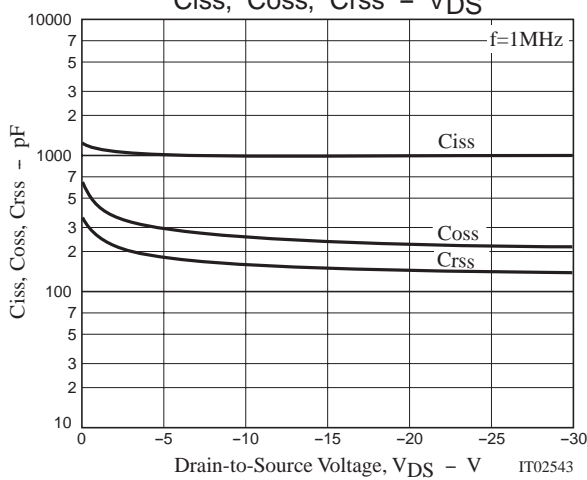
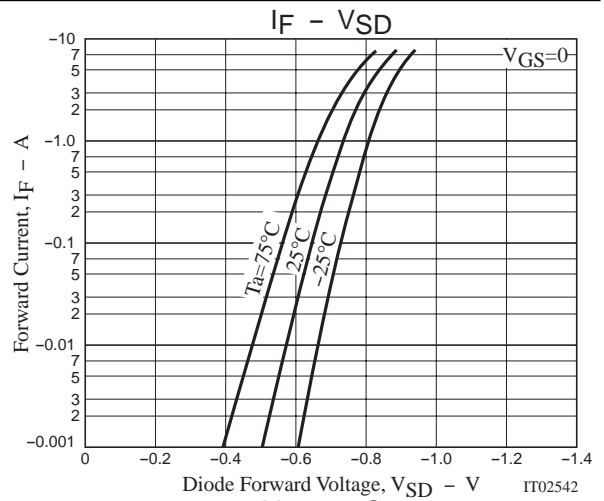
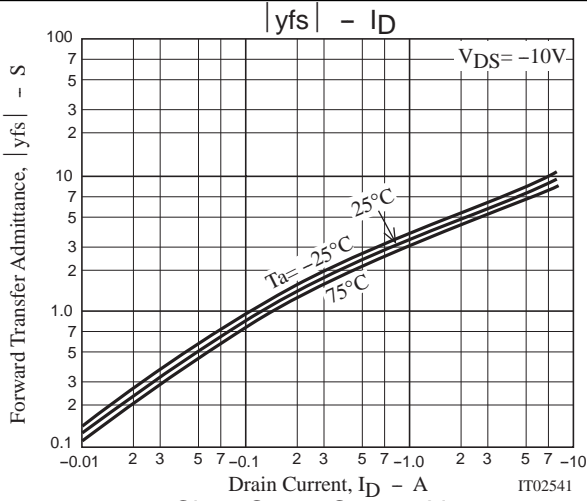
## Switching Time Test Circuit



## Electrical Connection



# FTD1012



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