

**FTD1012**

## Load Switching Applications

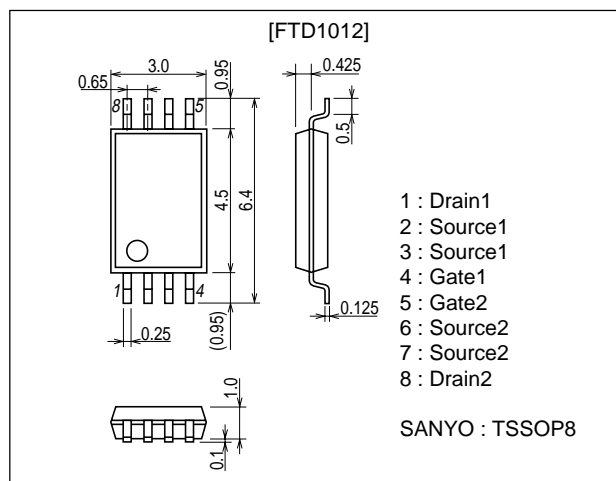
### Features

- 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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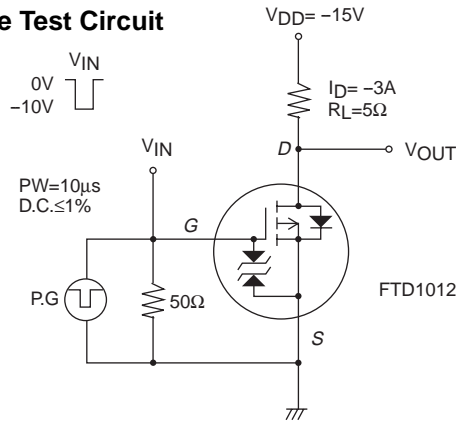
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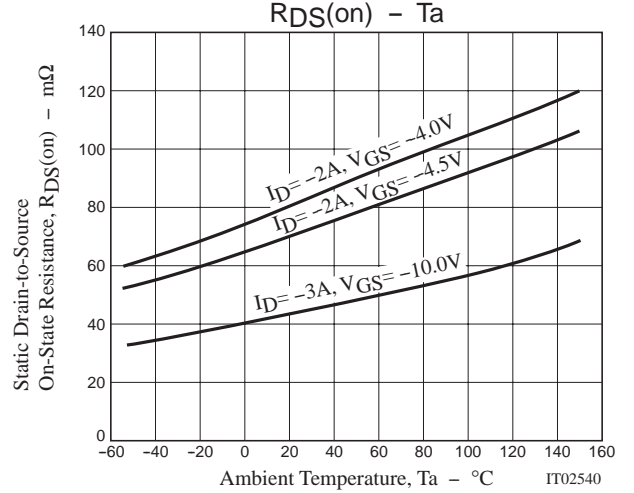
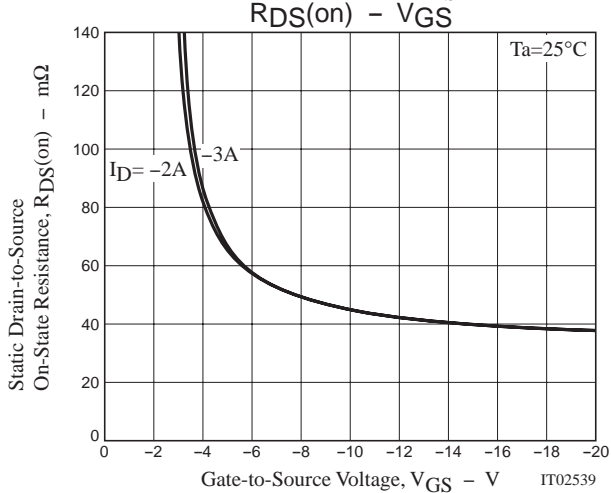
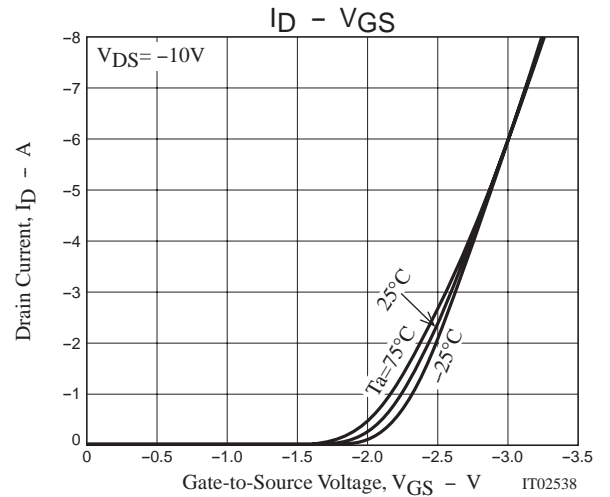
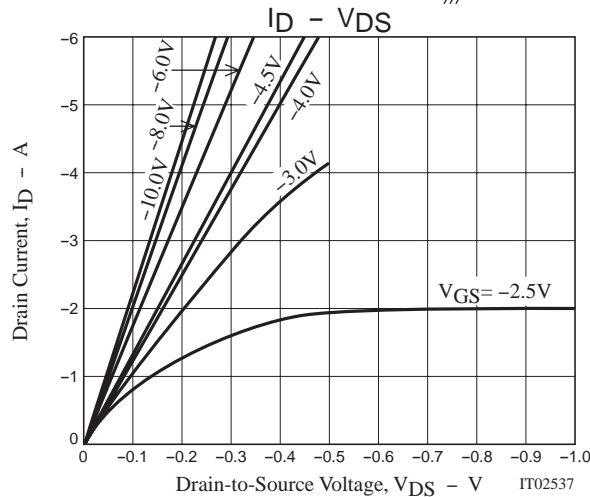
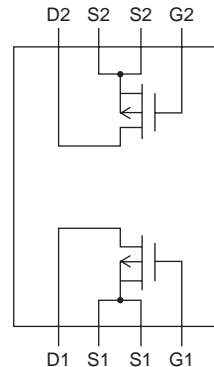
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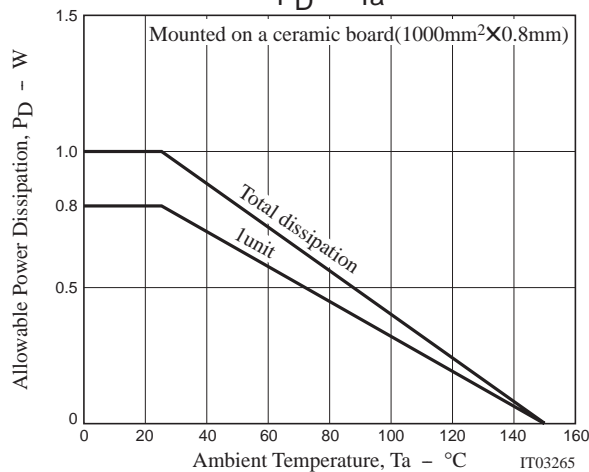
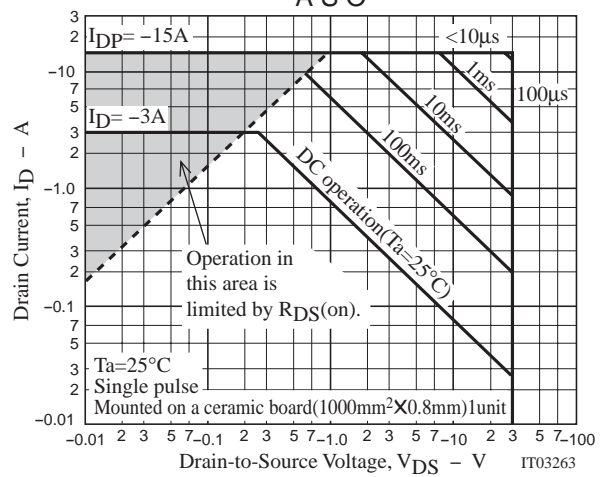
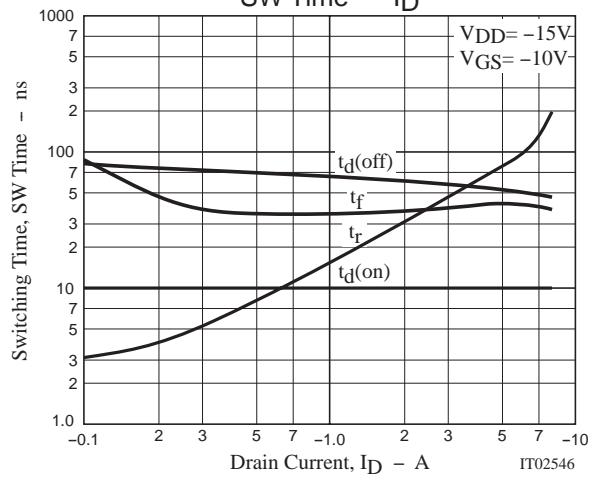
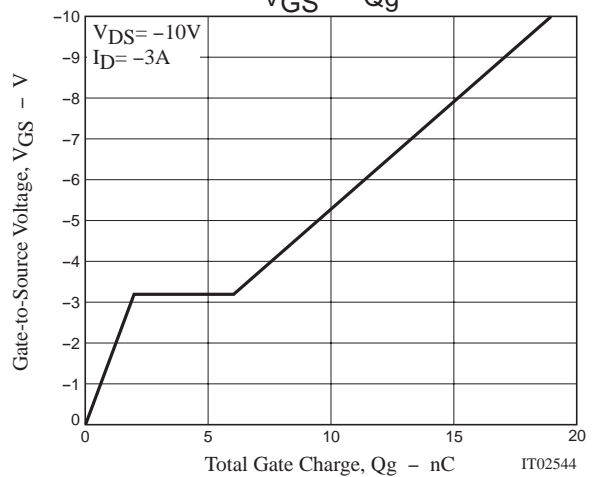
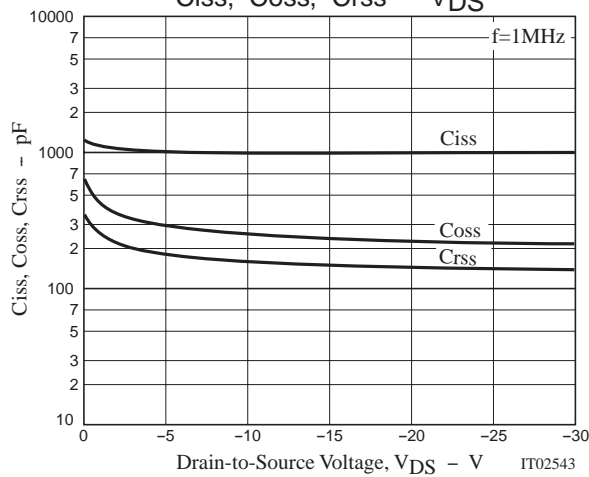
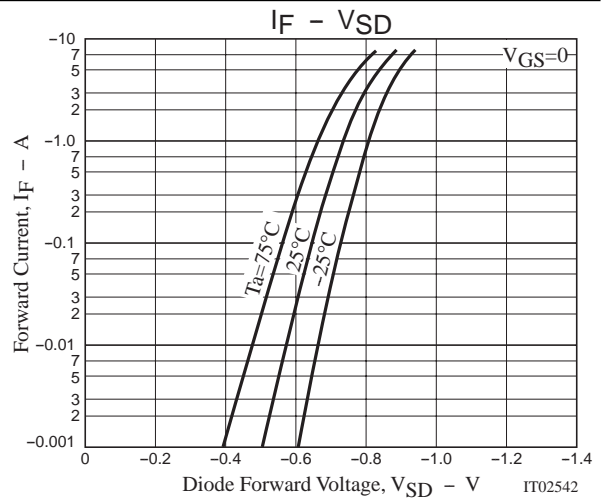
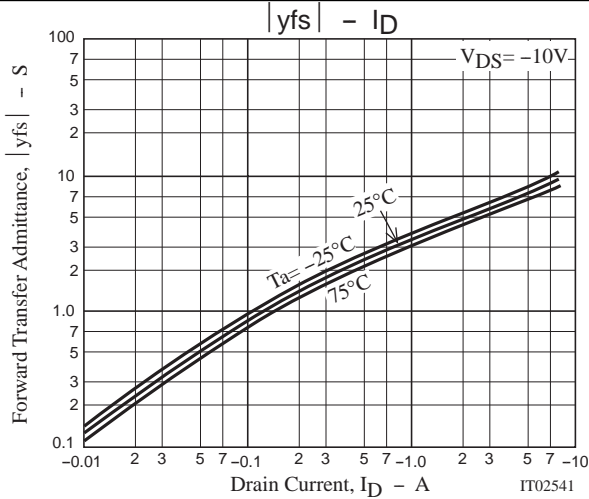
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on) 1}$	$I_D = -3A, V_{GS} = -10V$		50	65	$m\Omega$
	$R_{DS(on) 2}$	$I_D = -2A, V_{GS} = -4.5V$		80	110	$m\Omega$
	$R_{DS(on) 3}$	$I_D = -2A, V_{GS} = -4V$		85	120	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		1000		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -10V, f = 1MHz$		250		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10V, f = 1MHz$		160		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		10		ns
Rise Time	$t_r$	See specified Test Circuit		30		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		55		ns
Fall Time	$t_f$	See specified Test Circuit		50		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -3A$		19		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -3A$		2		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -3A$		4		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -3A, V_{GS} = 0$		-1.0	-1.5	V

## Switching Time Test Circuit



## Electrical Connection





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