



Ultrahigh-Speed Switching Applications

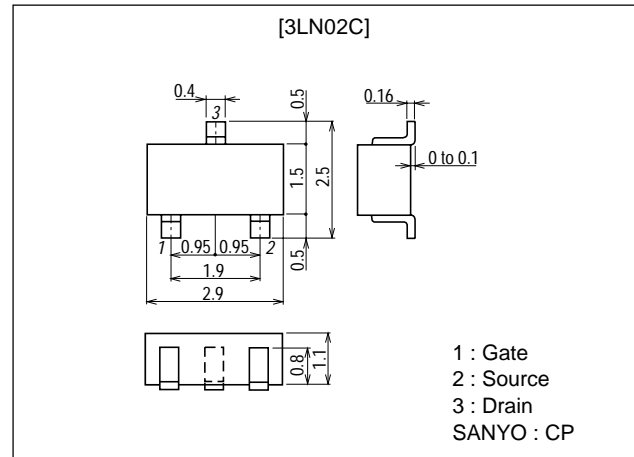
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit:mm

2091A



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}		±10	V
Drain Current (DC)	I_D		0.3	A
Drain Current (pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	1.2	A
Allowable Power Dissipation	P_D		0.25	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-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}	$V_{DS} = 30V$, $V_{GS} = 0$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$, $I_D = 100\mu A$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$, $I_D = 150mA$	0.4	0.56		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 150mA$, $V_{GS} = 4V$		0.9	1.2	Ω
	$R_{DS(on)2}$	$I_D = 80mA$, $V_{GS} = 2.5V$		1.2	1.7	Ω
	$R_{DS(on)3}$	$I_D = 10mA$, $V_{GS} = 1.5V$		2.6	5.2	Ω

Marking : YD

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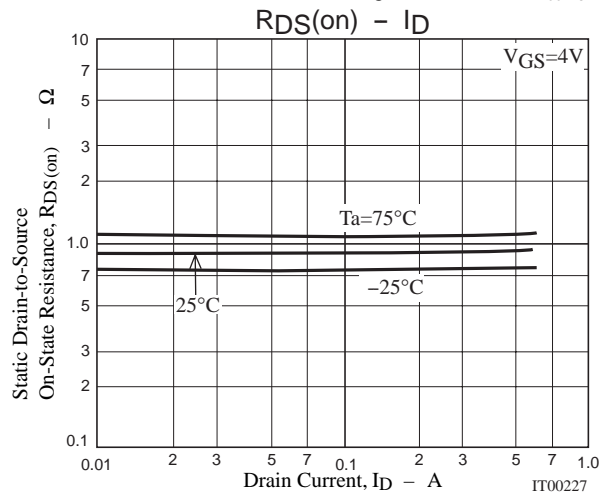
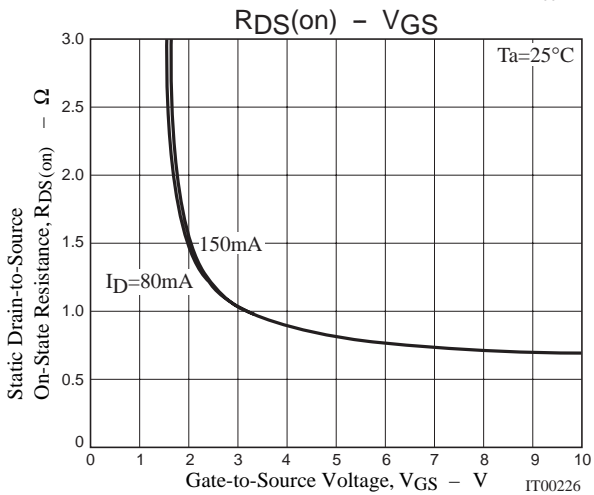
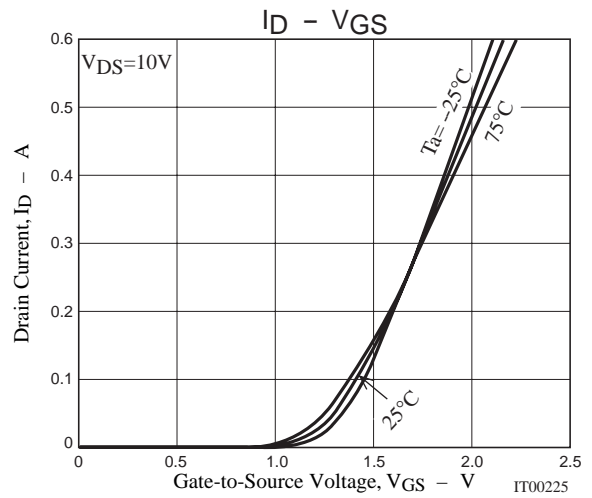
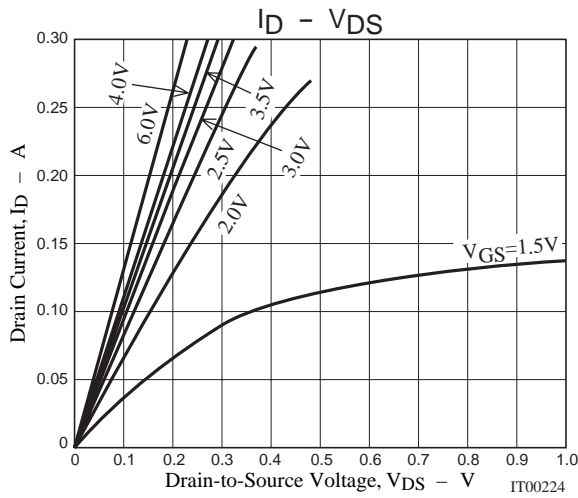
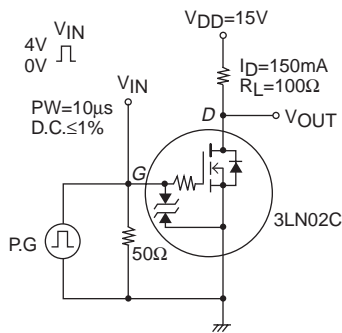
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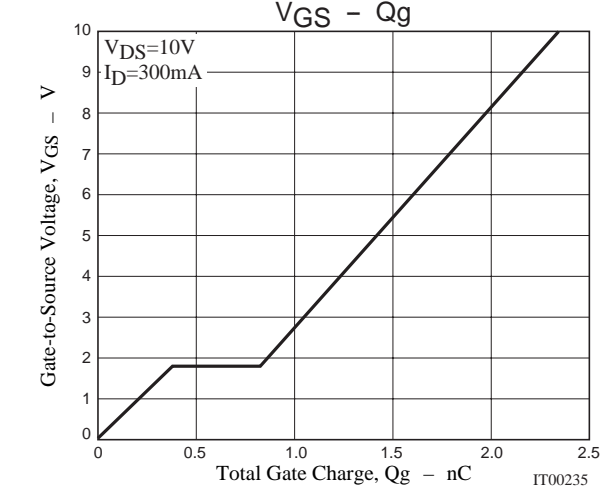
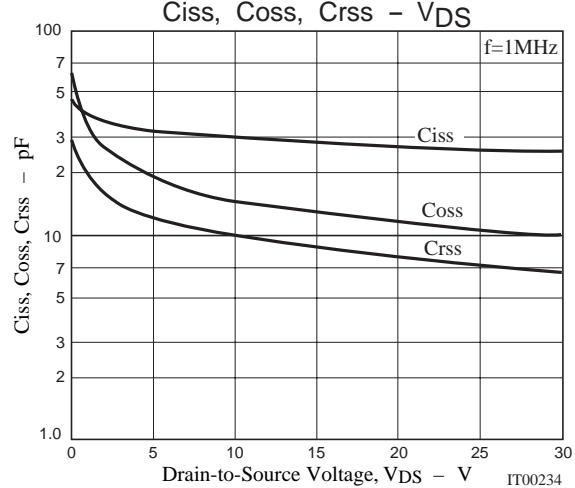
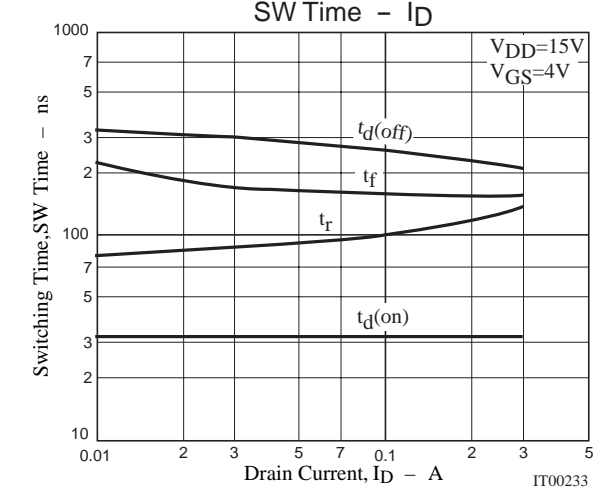
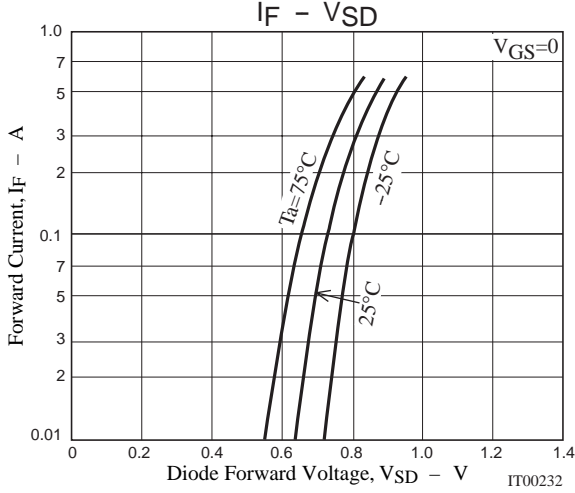
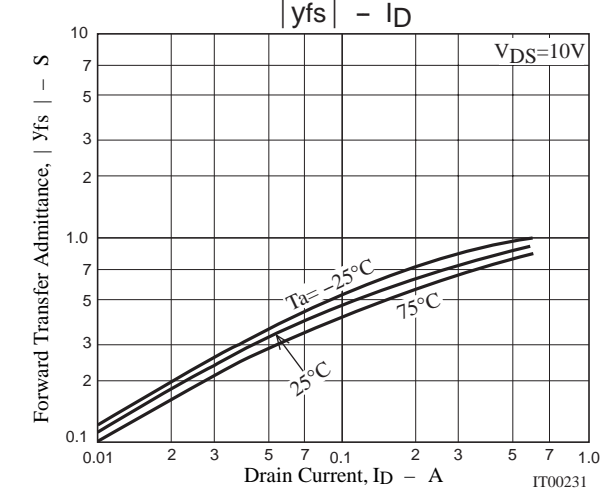
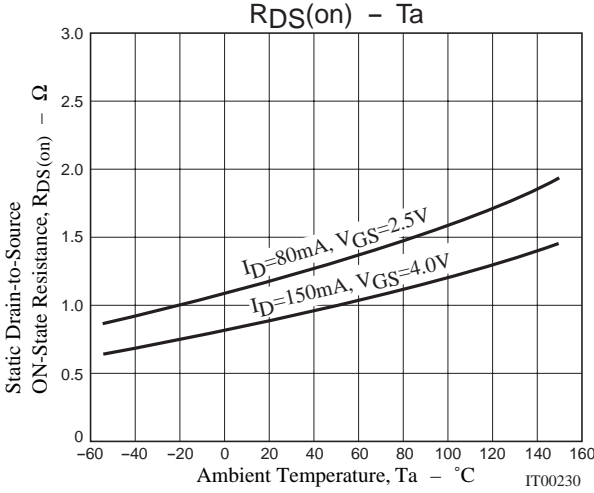
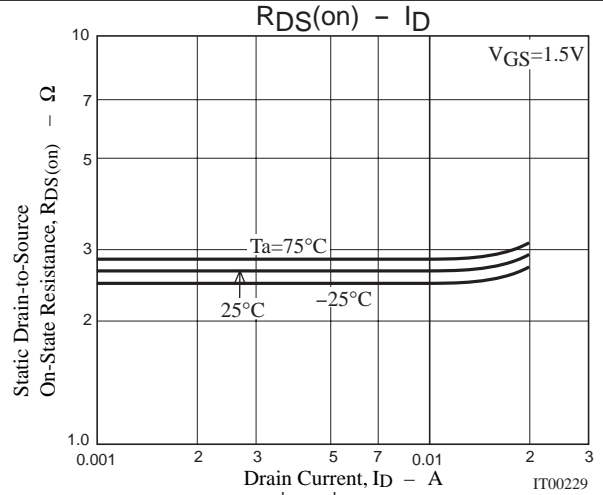
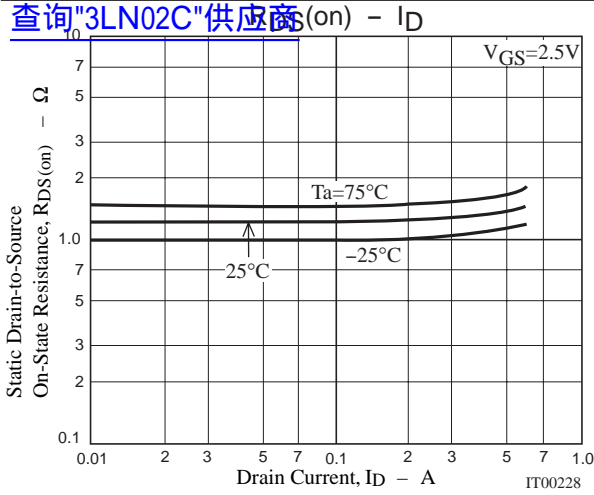
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		30		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		15		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		10		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		32		ns
Rise Time	t_r	See specified Test Circuit		110		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		250		ns
Fall Time	t_f	See specified Test Circuit		160		ns
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		2.34		nC
Gate-to-Source Charge	Qgs	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		0.38		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=10V, V_{GS}=10V, I_D=300mA$		0.45		nC
Diode Forward Voltage	V_{SD}	$I_S=300mA, V_{GS}=0$		0.8	1.2	V

Switching Time Test Circuit



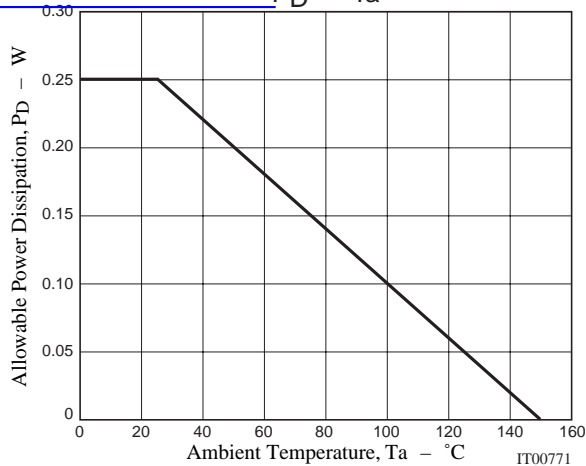
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