



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6331 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 4V drive

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}		±20	V
Drain Current (DC)	I _D		-3.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-14	A
Allowable Power Dissipation	P _D	When mounted on ceramic substrate (1200mm ² ×0.8mm)	1.5	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} =0V	-30			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-1.5A	1.68	2.8		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-1.5A, V _{GS} =-10V		75	98	mΩ
	R _{DS(on)2}	I _D =-0.75A, V _{GS} =-4.5V		122	171	mΩ
	R _{DS(on)3}	I _D =-0.75A, V _{GS} =-4V		142	199	mΩ

Marking : YF

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MCH6331

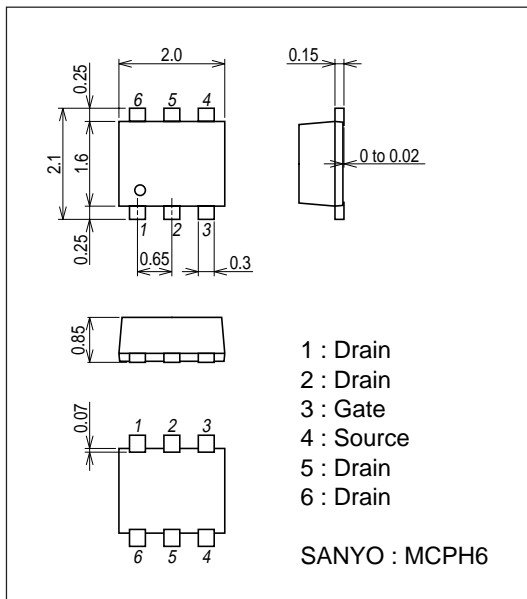
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		250		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		65		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		46		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		5.4		ns
Rise Time	t_r	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		26		ns
Fall Time	t_f	See specified Test Circuit.		19		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3.5A$		5.0		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3.5A$		1.0		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-3.5A$		1.2		nC
Diode Forward Voltage	V_{SD}	$I_S=-3.5A, V_{GS}=0V$		-0.86	-1.5	V

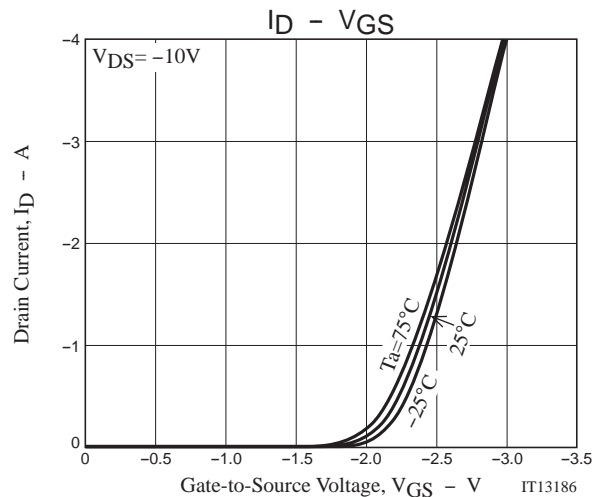
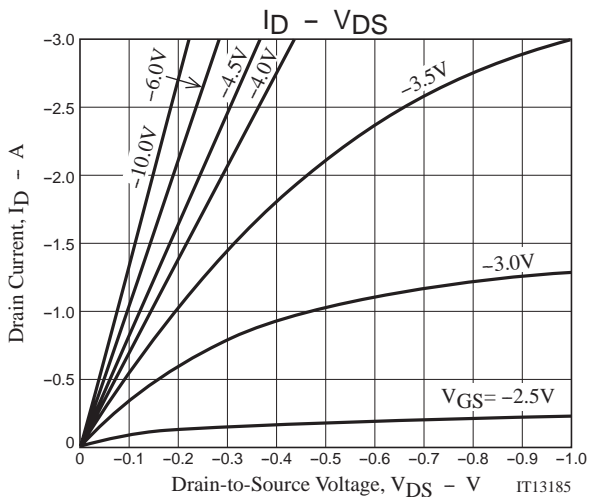
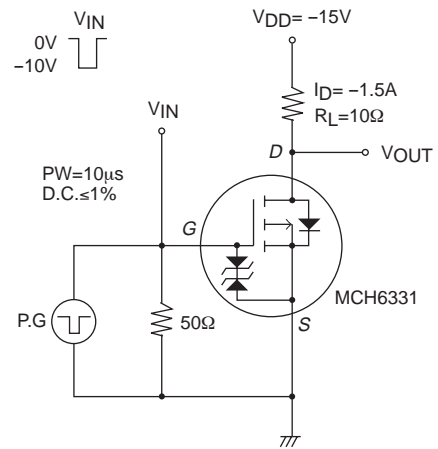
Package Dimensions

unit : mm (typ)

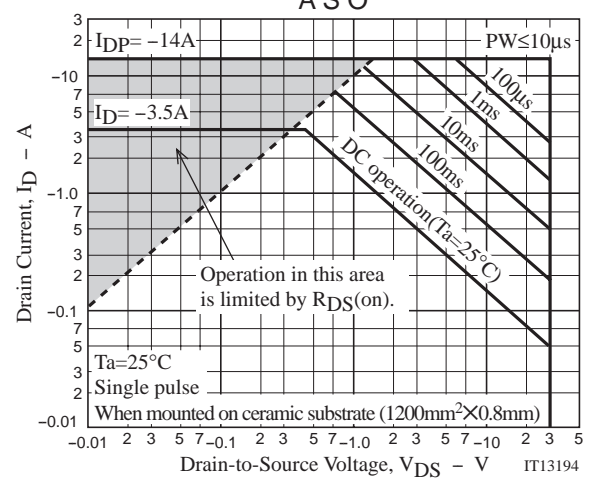
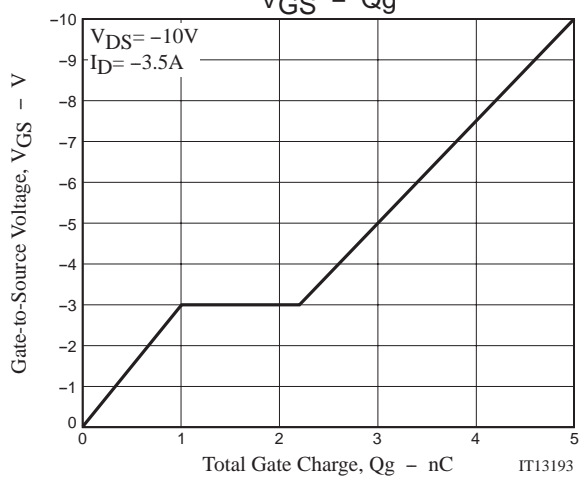
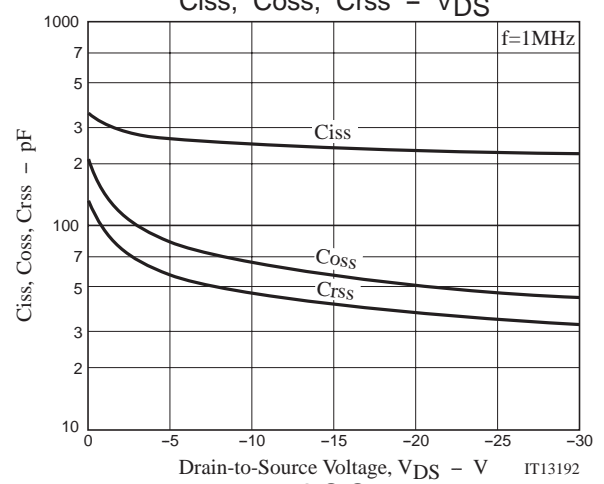
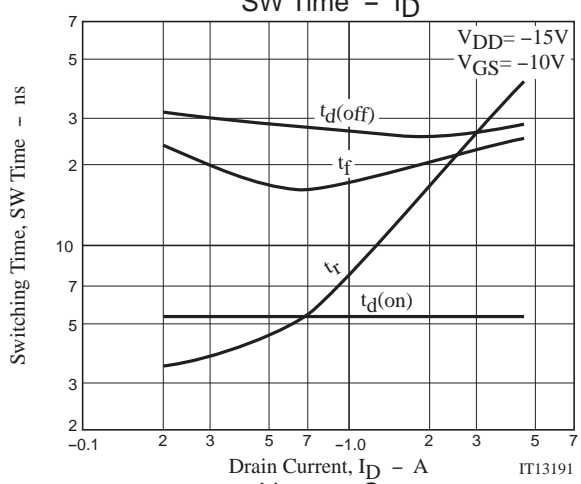
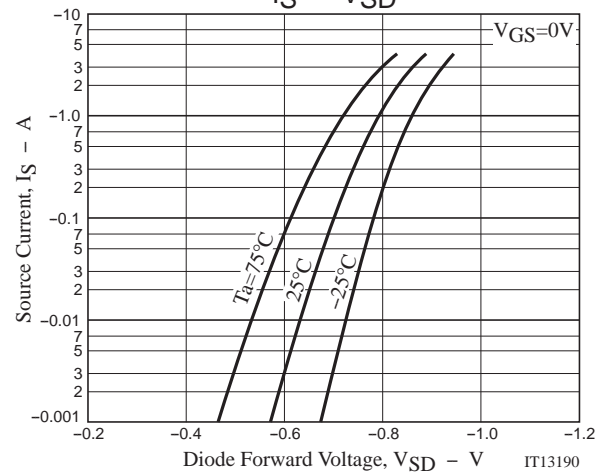
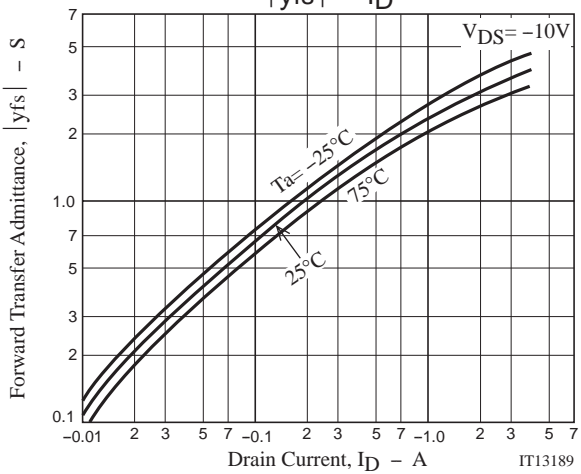
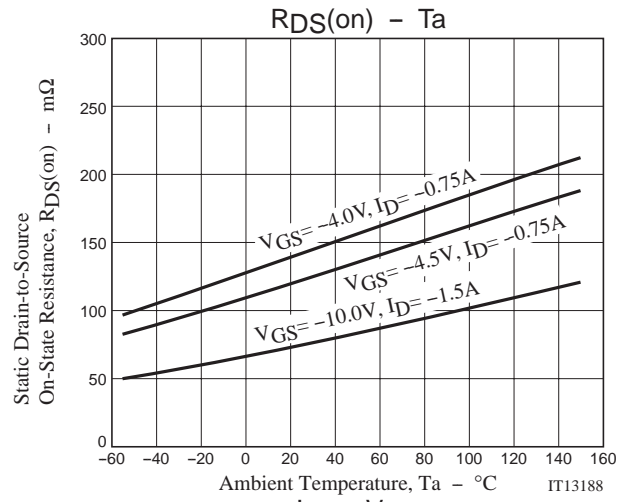
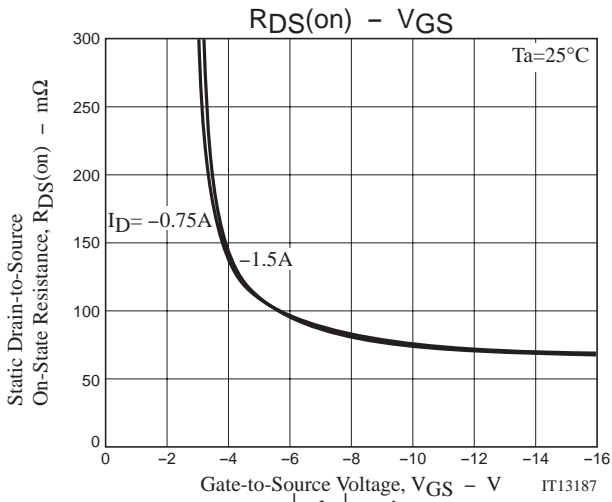
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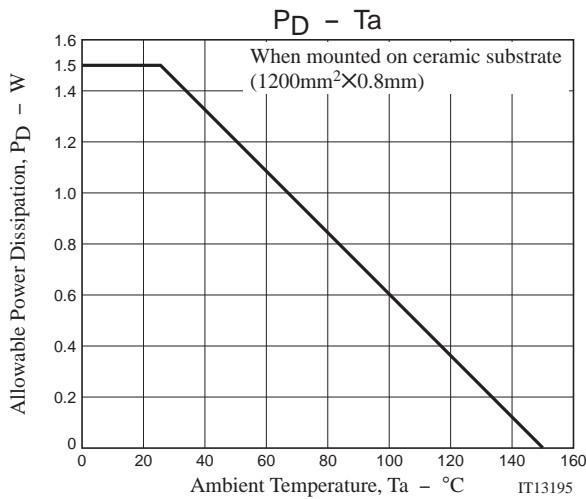


Switching Time Test Circuit



MCH6331





Note on usage : Since the MCH6331 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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