



ON Semiconductor®

ON Semiconductor

DATA SHEET

MCH3333

General-Purpose Switching Device Applications

P-Channel Silicon MOSFET

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V 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}		±10	V
Drain Current (DC)	I _D		-1.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-6.0	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (900mm²×0.8mm)	0.9	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			-1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =-10V, I _D =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-0.8A	1.38	2.3		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-0.8A, V _{GS} =-4V		215	280	mΩ
	R _{DS(on)2}	I _D =-0.4A, V _{GS} =-2.5V		290	410	mΩ
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		285		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		52		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		38		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		10		ns
Rise Time	t _r	See specified Test Circuit.		21		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		35		ns
Fall Time	t _f	See specified Test Circuit.		28		ns

Marking : YJ

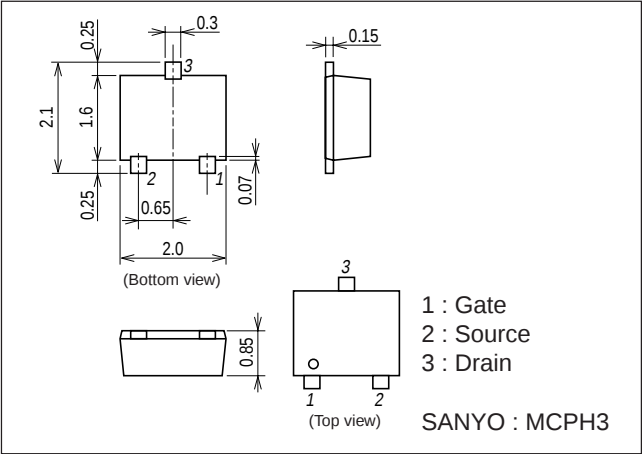
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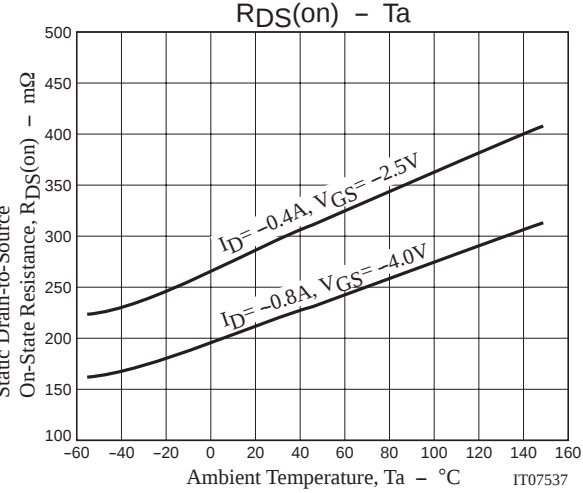
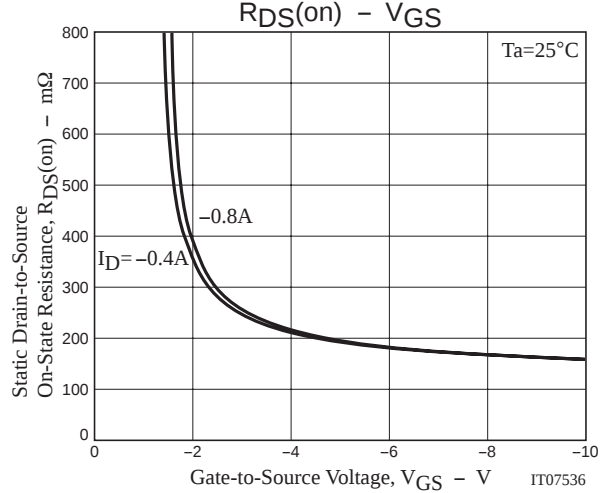
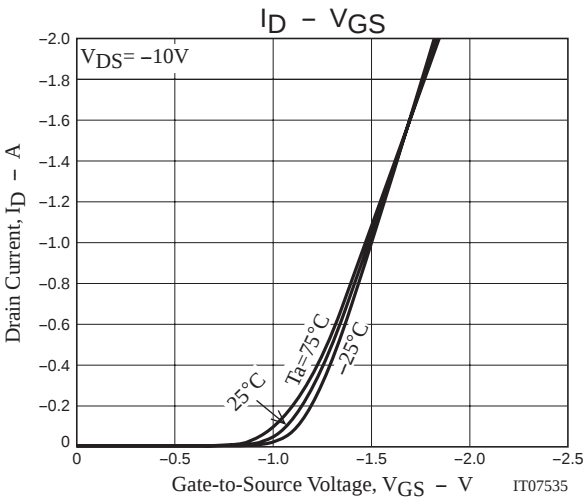
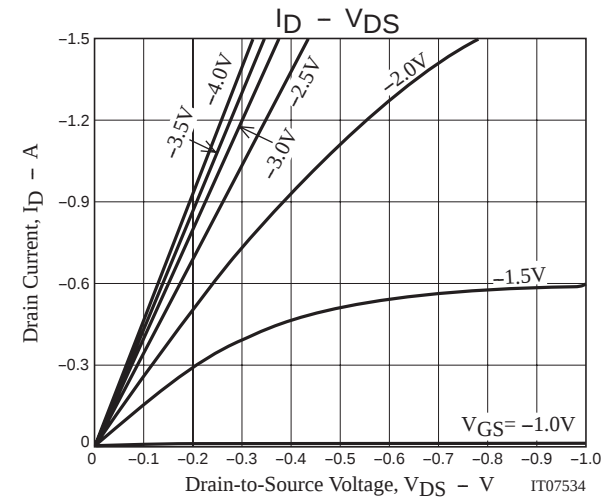
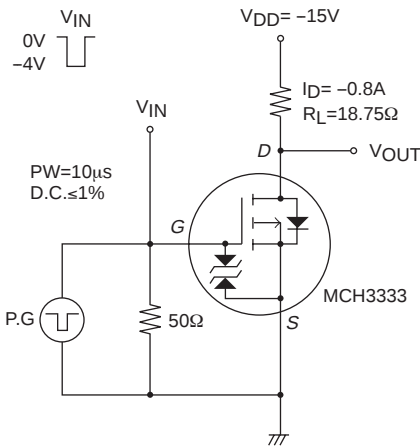
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =-10V, V _{GS} =-4V, I _D =-1.5A		2.6		nC
Gate-to-Source Charge	Qgs	V _{DS} =-10V, V _{GS} =-4V, I _D =-1.5A		0.78		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =-10V, V _{GS} =-4V, I _D =-1.5A		0.64		nC
Diode Forward Voltage	V _{SD}	I _S =-1.5A, V _{GS} =0		-0.89	-1.5	V

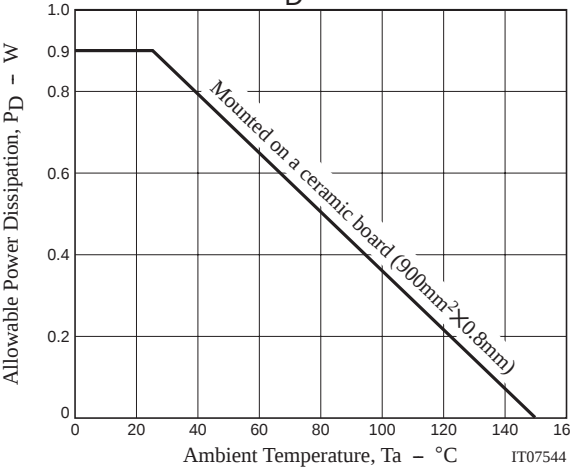
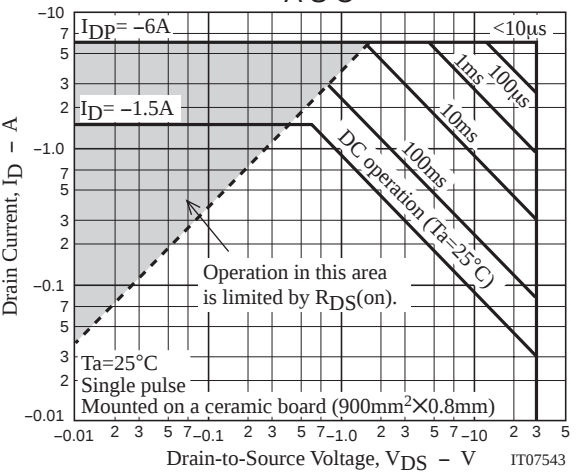
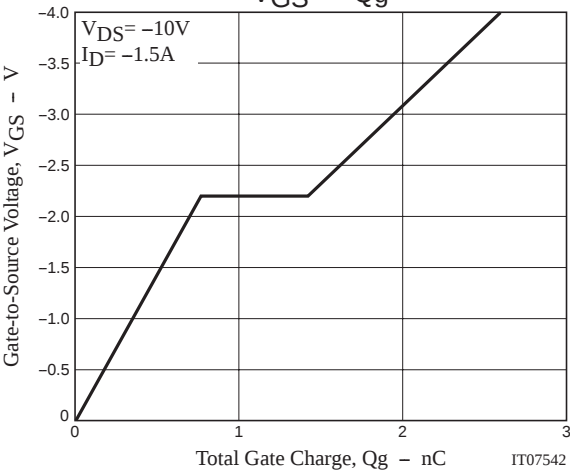
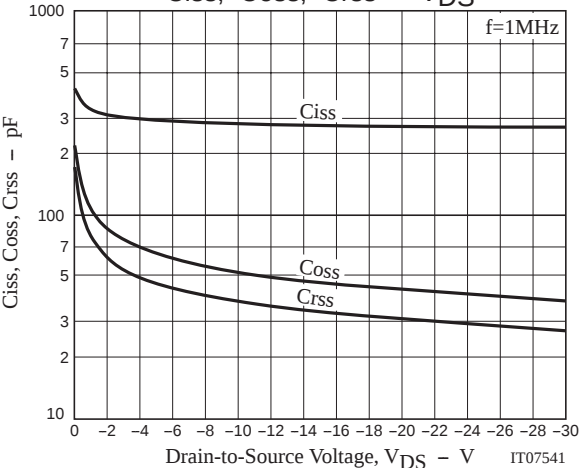
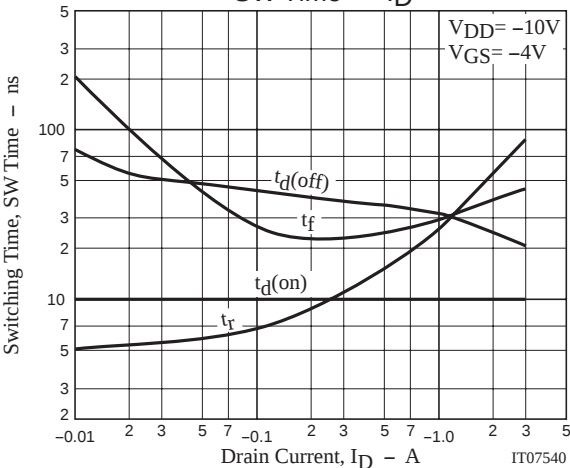
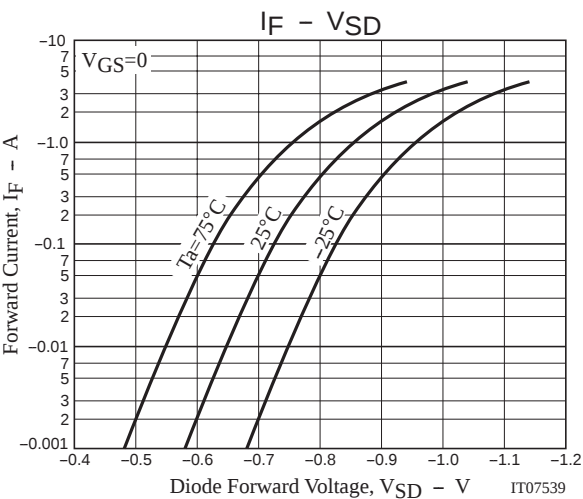
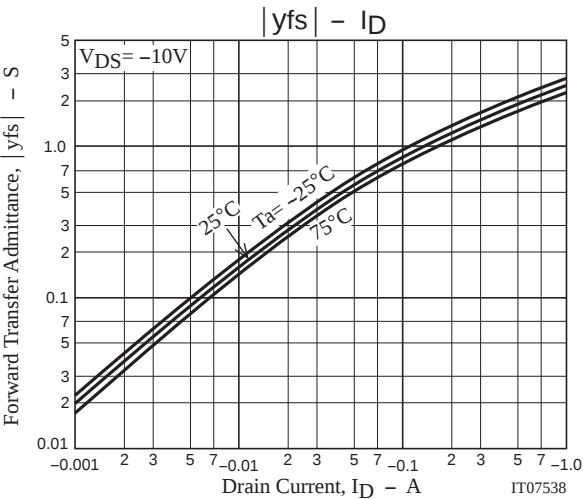
Package Dimensions

unit : mm
2167A



Switching Time Test Circuit





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