Ordering number : ENN7531

N-Channel Silicon MOSFET

MCH3443

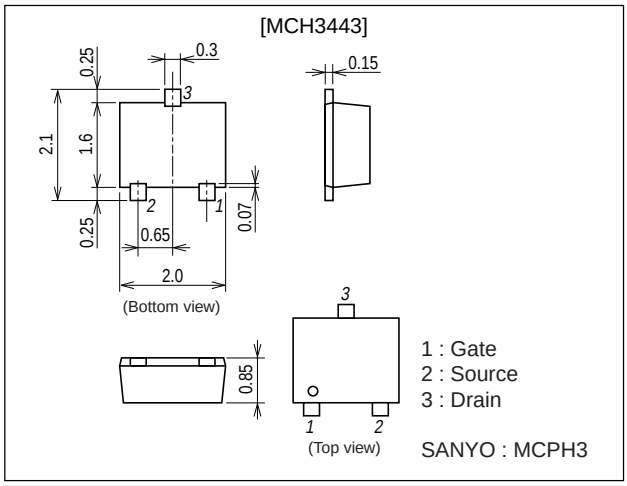
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit : mm
2167A



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}		±12	V
Drain Current (DC)	I_D		1.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	6	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	0.8	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	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		1.3	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=800mA	1.3	2.2		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=800mA, V_{GS}=4V		165	215	mΩ
	R_{DS}(on)2	I_D=400mA, V_{GS}=2.5V		210	295	mΩ

Marking : ZU

Continued on next page.

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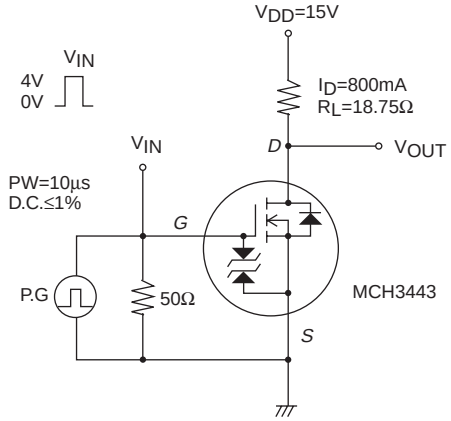
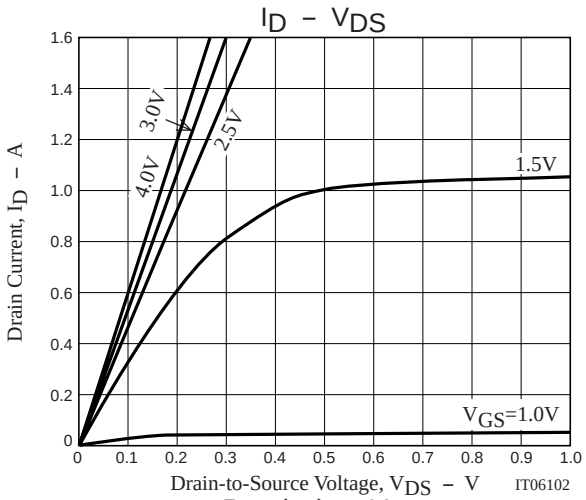
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

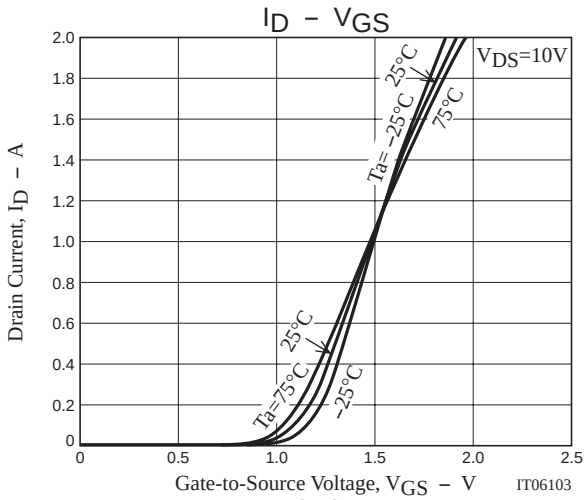
Continued from preceding page.

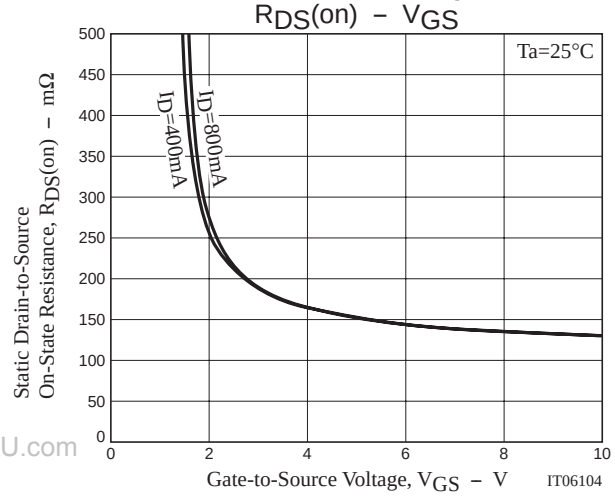
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		130		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		22		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		16		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit		9		ns
Rise Time	t_{r}	See specified Test Circuit		20		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit		23		ns
Fall Time	t_{f}	See specified Test Circuit		29		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4V, I_{D}=1.5A		2.2		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4V, I_{D}=1.5A		0.52		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=4V, I_{D}=1.5A		0.52		nC
Diode Forward Voltage	V_{SD}	I_{S}=1.5A, V_{GS}=0		0.9	1.2	V

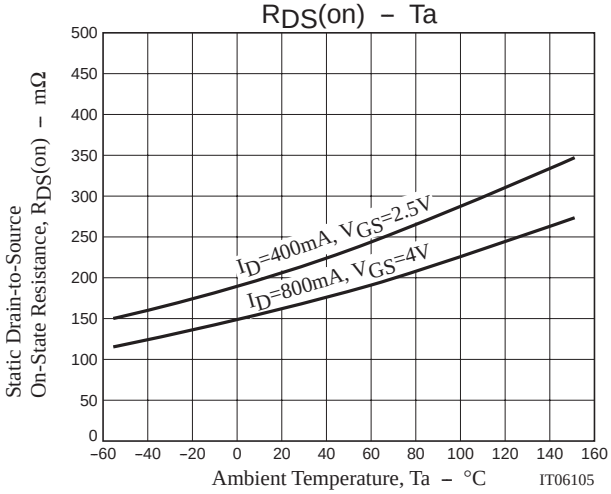
Switching Time Test Circuit

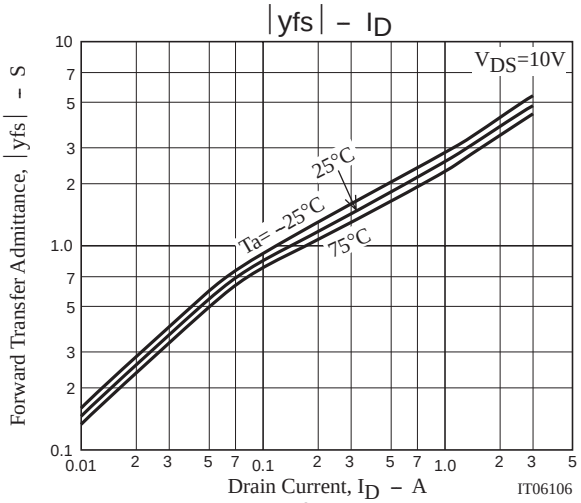


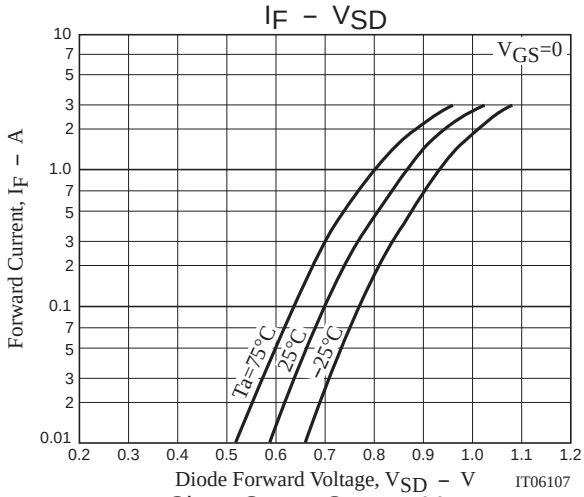


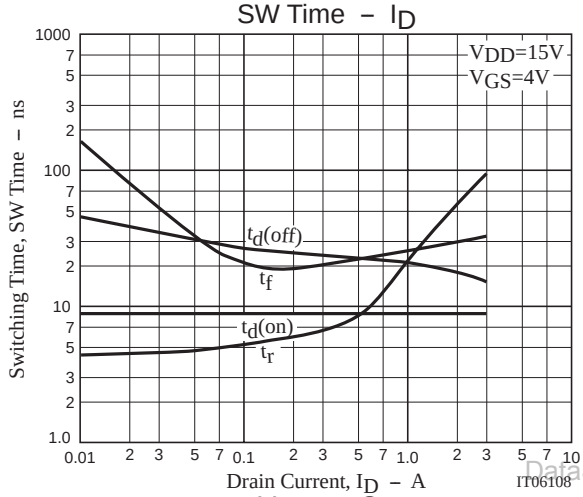


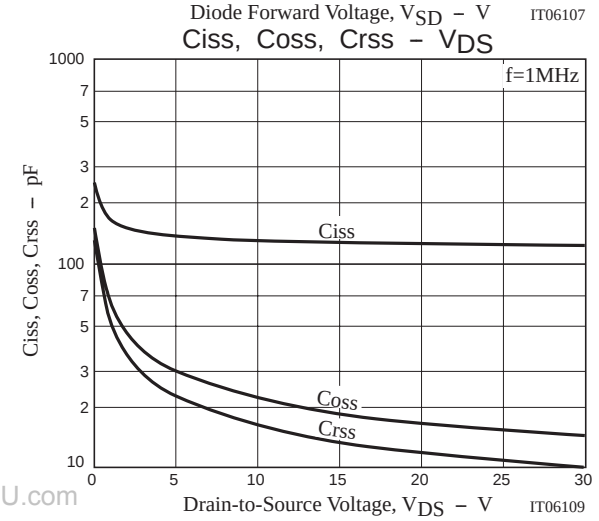


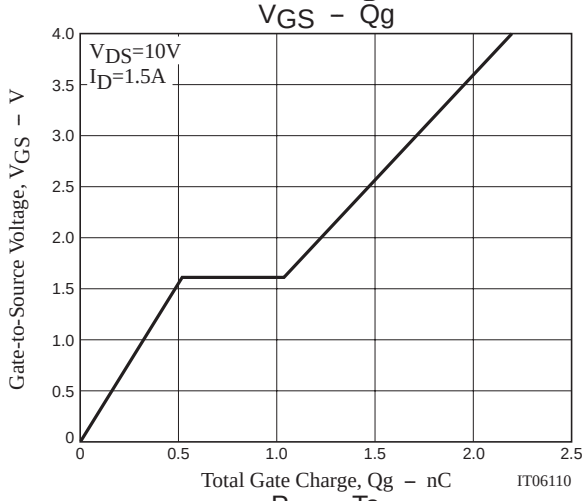


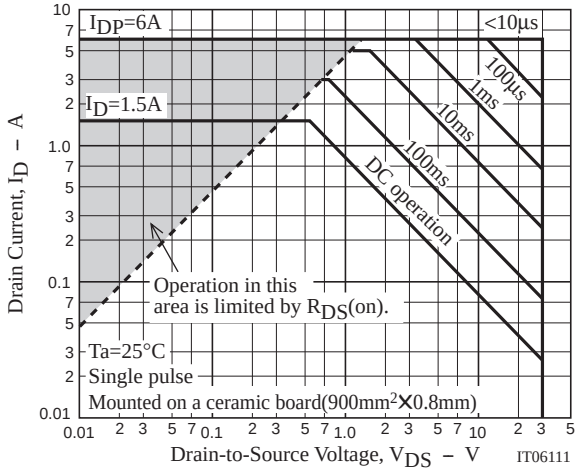


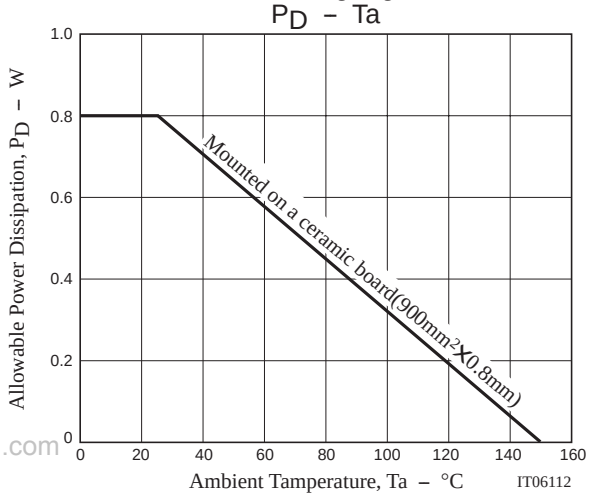












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