Ordering number : ENA0443

ON Semiconductor®

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DATA SHEET

N-Channel Silicon MOSFET

CPH6434 — General-Purpose Switching Device Applications

Features

- Ultrahigh-speed switching.
- 1.8V 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		6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	24	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	1.6	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}=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}=±8V, V_{DS}=0V			±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=3A	4.4	7.4		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=3A, V_{GS}=4V		31	41	mΩ
	$R_{DS}(on)2$	I_D=1.5A, V_{GS}=2.5V		40	57	mΩ
	$R_{DS}(on)3$	I_D=0.3A, V_{GS}=1.8V		55	90	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		790		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		125		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		110		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		16.5		ns
Rise Time	t_r	See specified Test Circuit.		78		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		77		ns
Fall Time	t_f	See specified Test Circuit.		125		ns

Marking : ZL

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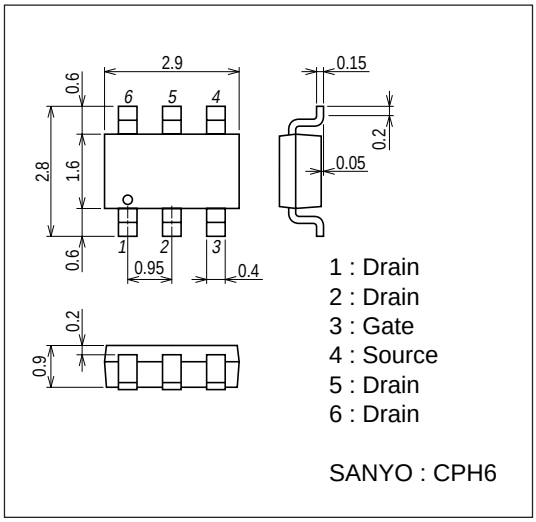
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=4V, I_D=6A		7.0		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=4V, I_D=6A		1.8		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=4V, I_D=6A		1.9		nC
Diode Forward Voltage	V_{SD}	I_S=6A, V_{GS}=0V		0.86	1.2	V

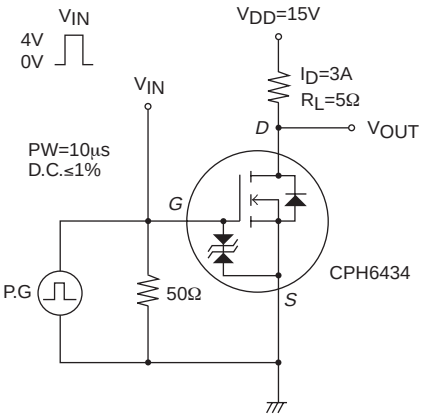
Package Dimensions

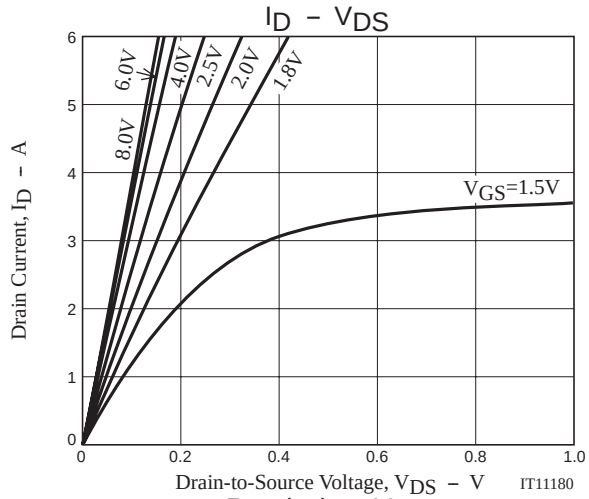
unit : mm

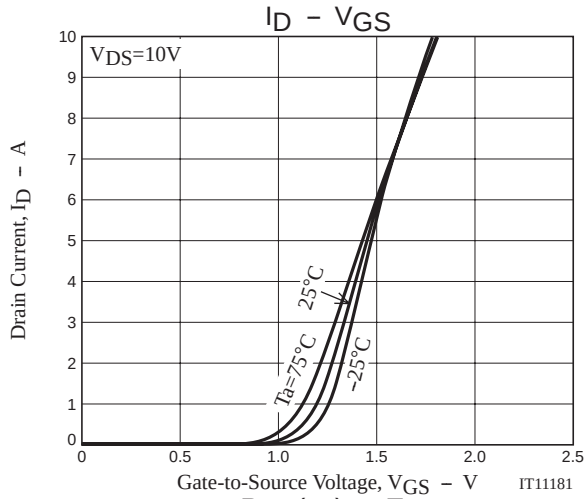
7018A-003

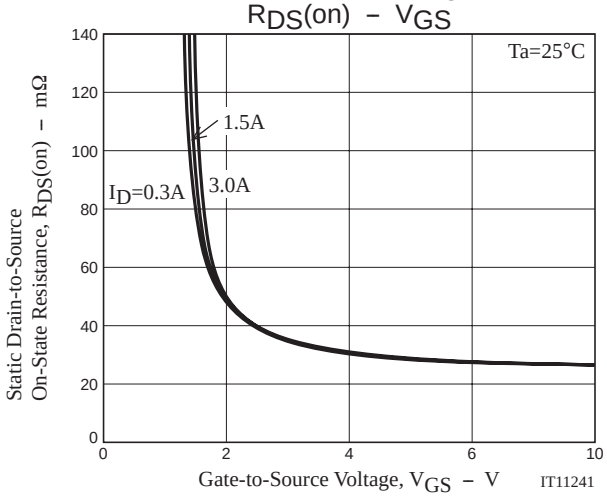


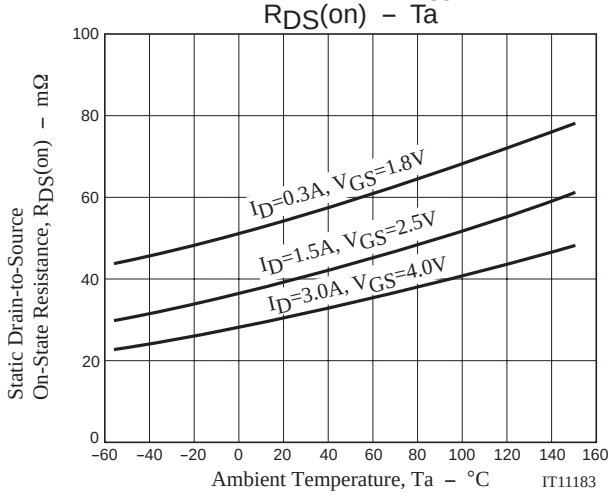
Switching Time Test Circuit

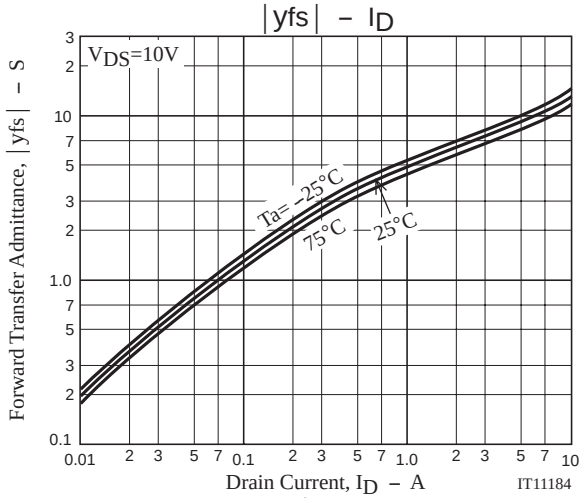


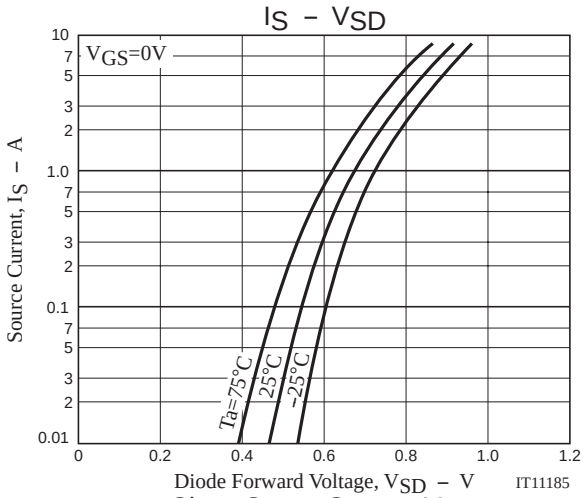


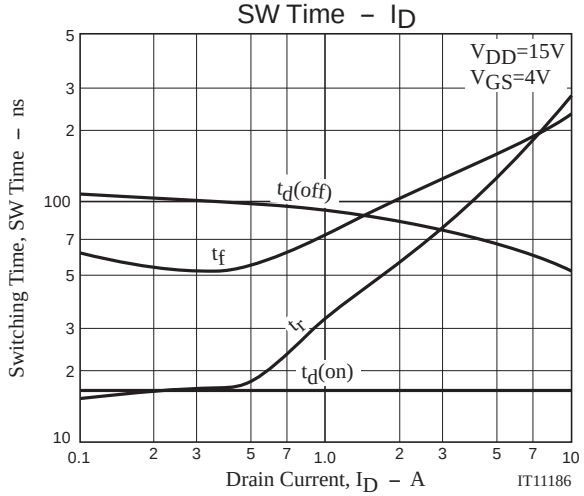


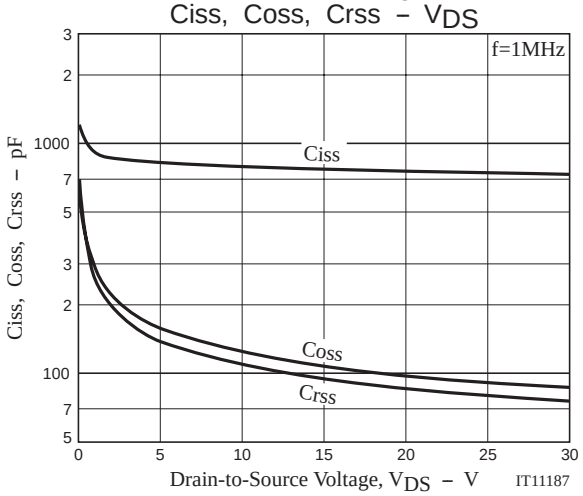


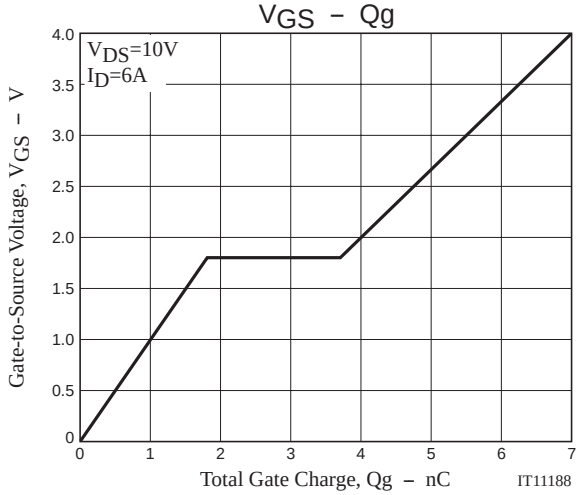


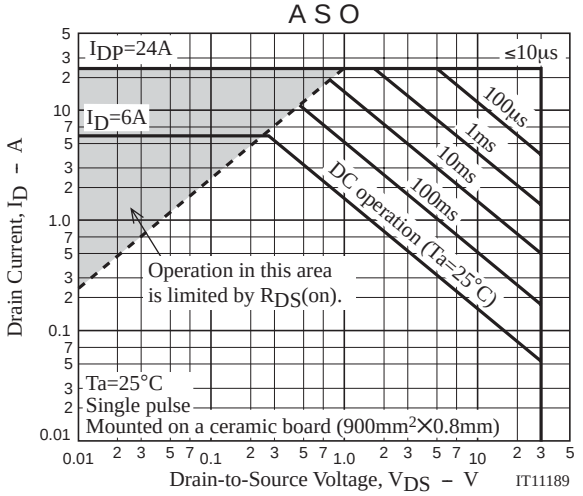


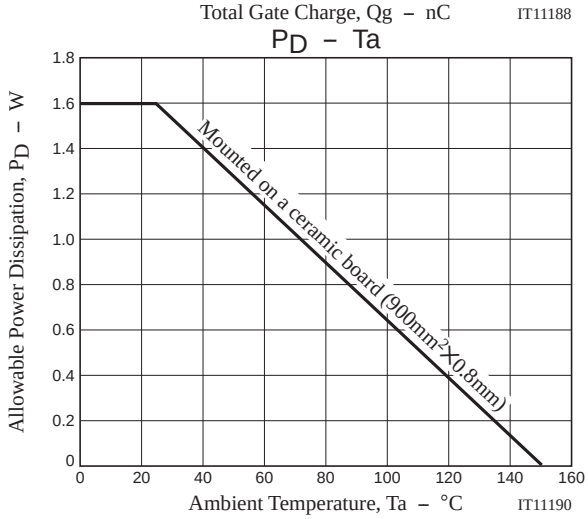












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