



ON Semiconductor®

ON Semiconductor
DATA SHEET**CPH3453** — N-Channel Silicon MOSFET
General-Purpose Switching Device
Applications**Features**

- Low ON-resistance.
- 2.5V drive.
- Halogen free compliance.

SpecificationsAbsolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		250	V
Gate-to-Source Voltage	V_{GS}		± 10	V
Drain Current (DC)	I_D		300	mA
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	1.2	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	250			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=250\text{V}$, $V_{GS}=0\text{V}$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.4		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=150\text{mA}$	0.6	1		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=150\text{mA}$, $V_{GS}=4.5\text{V}$		8.5	11	Ω
	$R_{DS(on)2}$	$I_D=75\text{mA}$, $V_{GS}=2.5\text{V}$		8.5	11	Ω

Marking : LK

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CPH3453

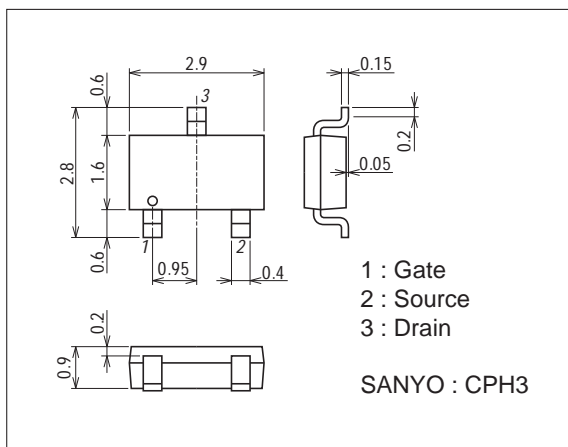
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		130		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		9.6		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		5.1		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		6.3		ns
Rise Time	t_r	See specified Test Circuit.		6.0		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		21		ns
Fall Time	t_f	See specified Test Circuit.		42		ns
Total Gate Charge	Qg	$V_{DS}=125V, V_{GS}=4.5V, I_D=300mA$		2.2		nC
Gate-to-Source Charge	Qgs	$V_{DS}=125V, V_{GS}=4.5V, I_D=300mA$		0.3		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=125V, V_{GS}=4.5V, I_D=300mA$		0.8		nC
Diode Forward Voltage	VSD	$I_S=300mA, V_{GS}=0V$		0.8	1.2	V

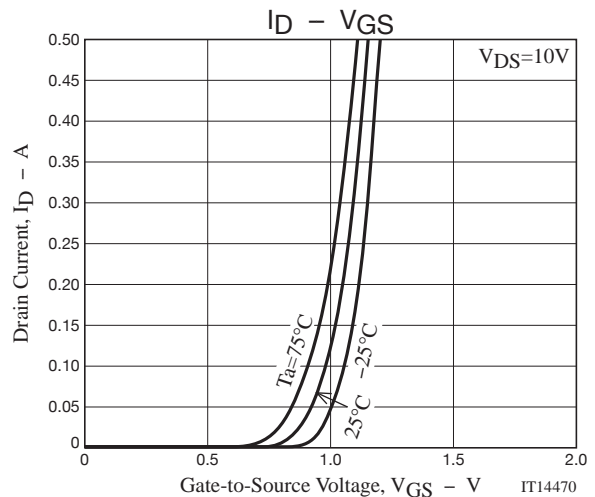
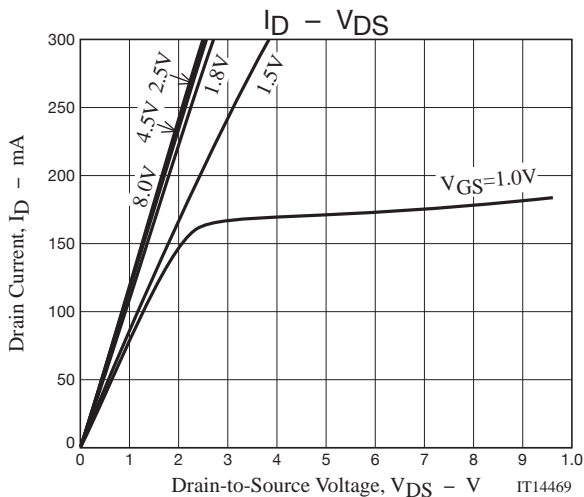
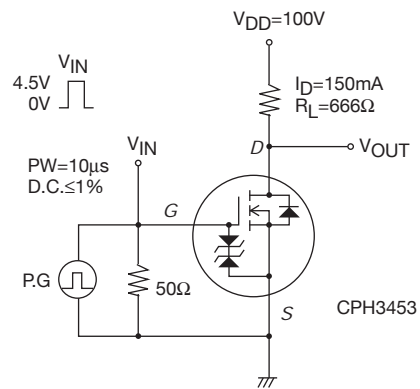
Package Dimensions

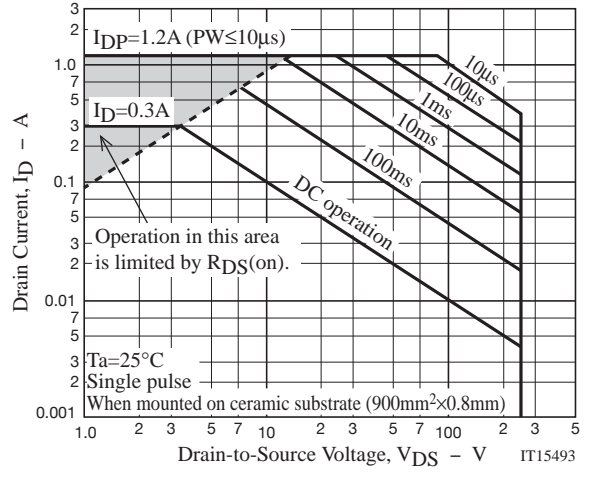
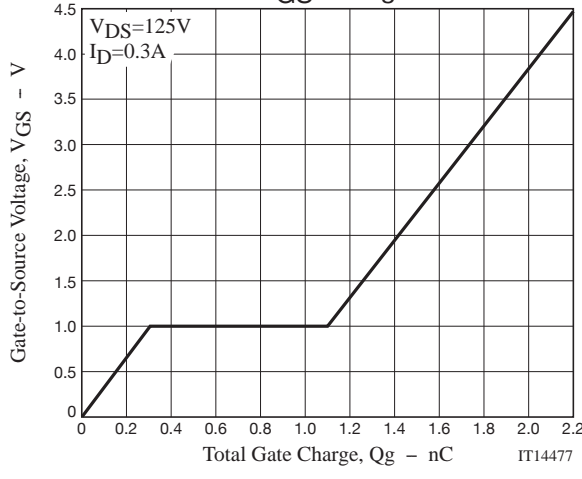
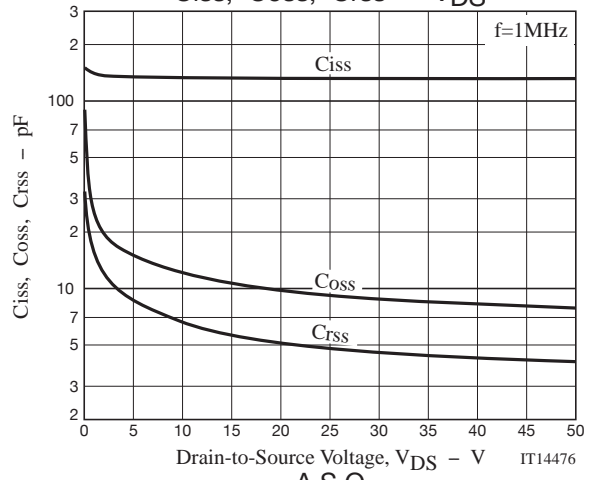
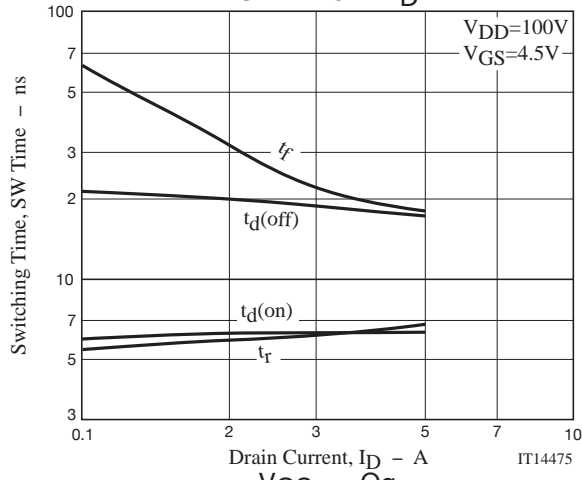
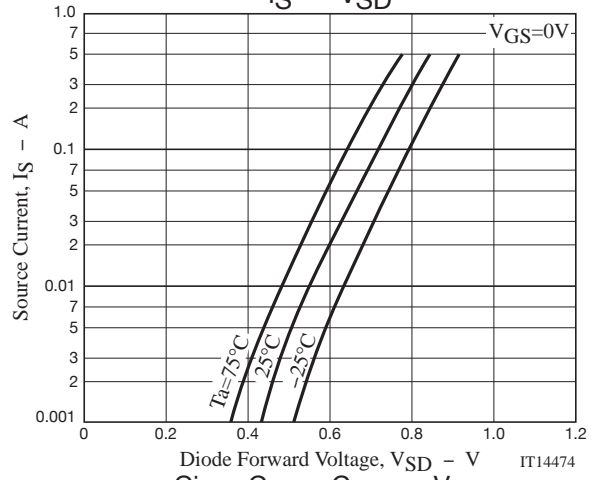
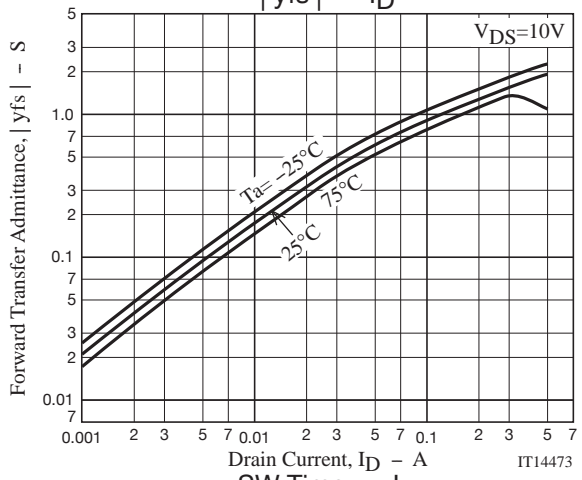
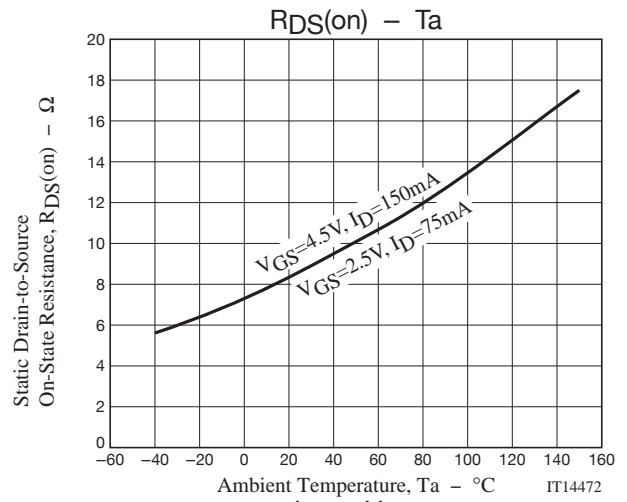
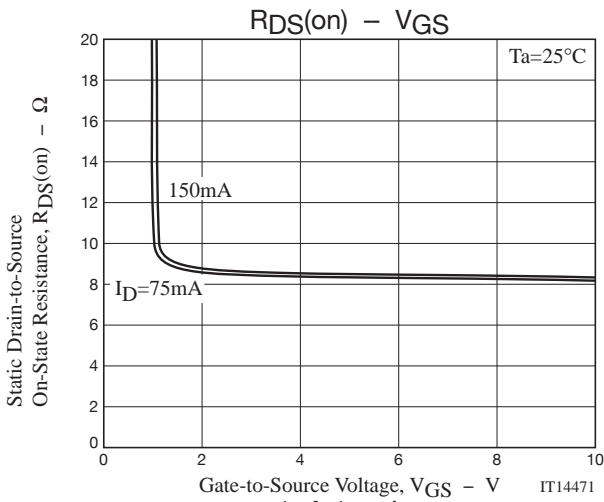
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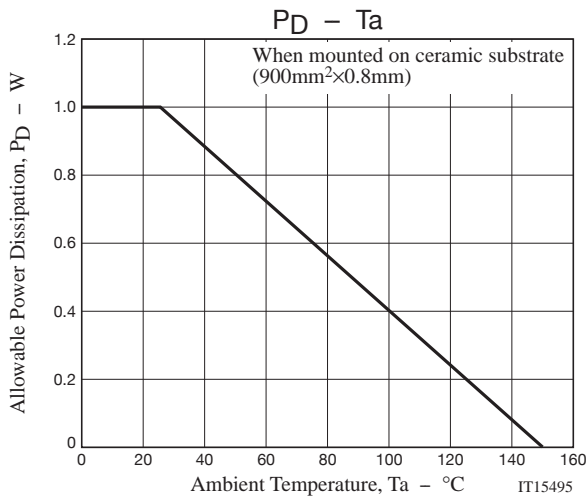
7015A-004



Switching Time Test Circuit







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