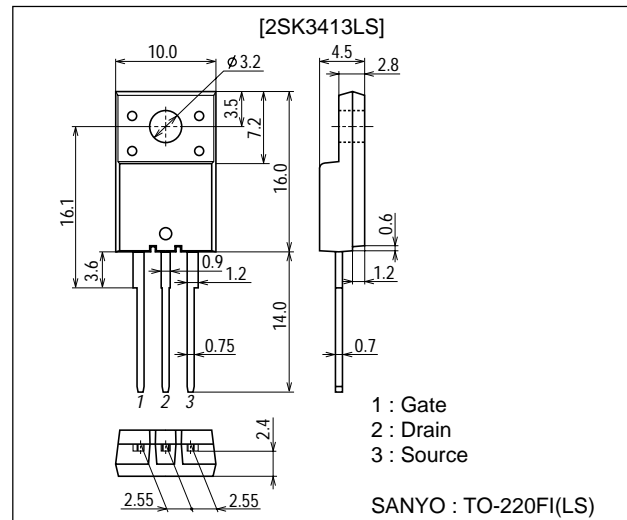


**2SK3413LS****DC / DC Converter Applications****Features**

- Low ON-resistance.
- 4V drive.

Package Dimensionsunit : mm
2078C**Specifications**Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		25	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	100	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c=25^\circ\text{C}$	25	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=12\text{A}$	16	23		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=12\text{A}$, $V_{GS}=10\text{V}$		25	33	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=12\text{A}$, $V_{GS}=4\text{V}$		35	49	$\text{m}\Omega$

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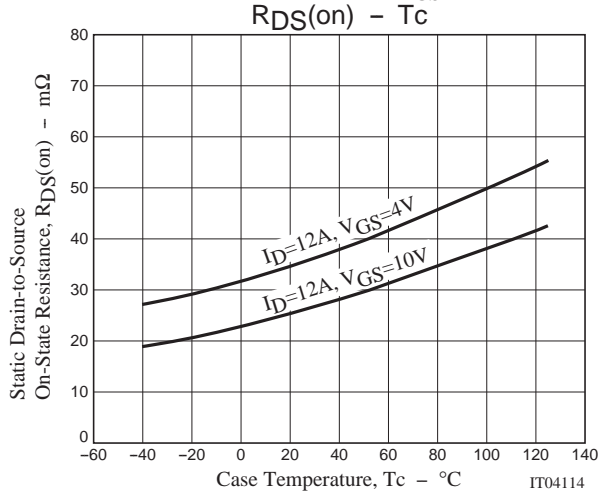
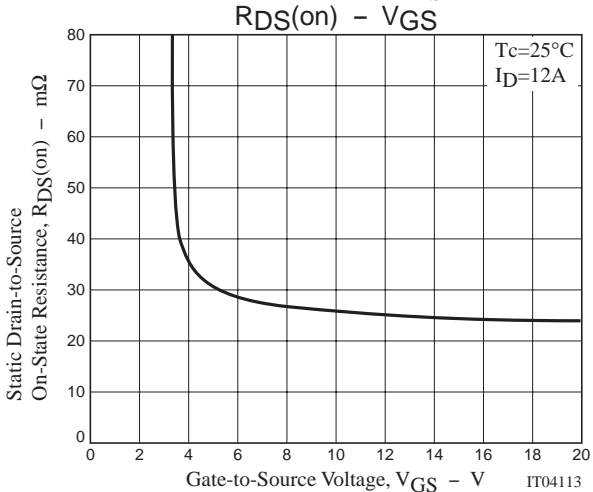
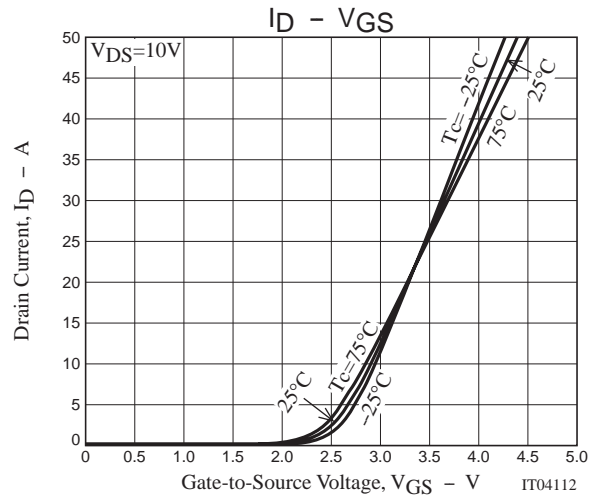
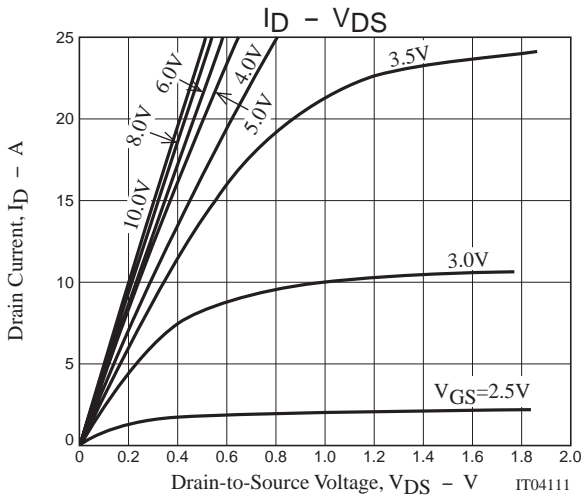
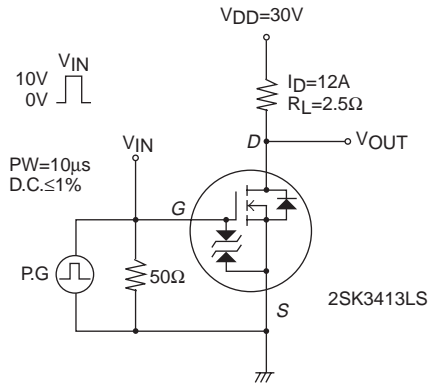
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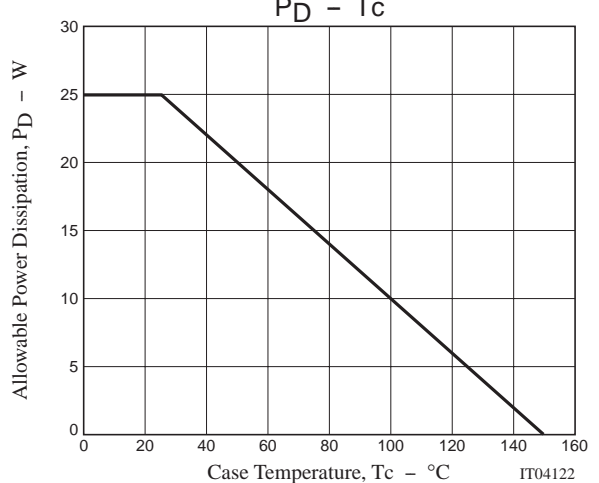
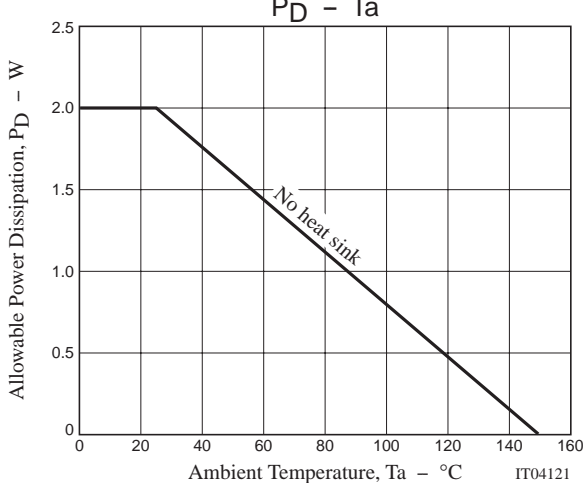
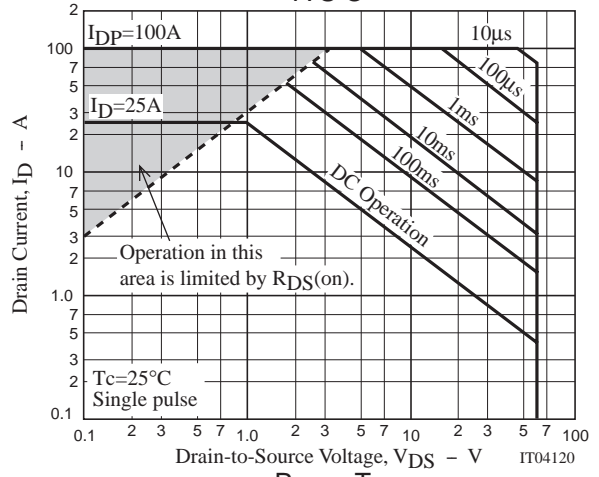
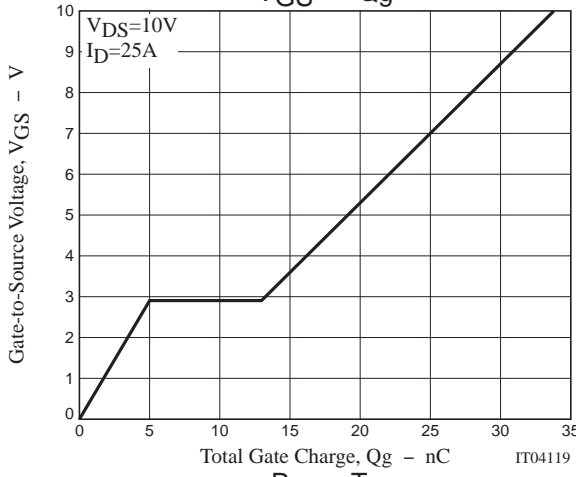
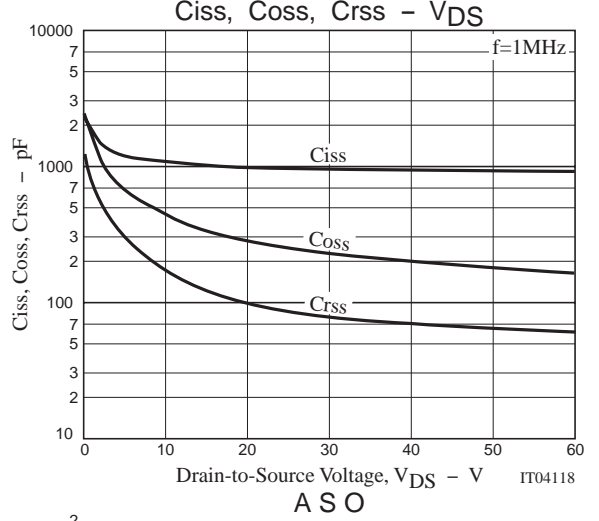
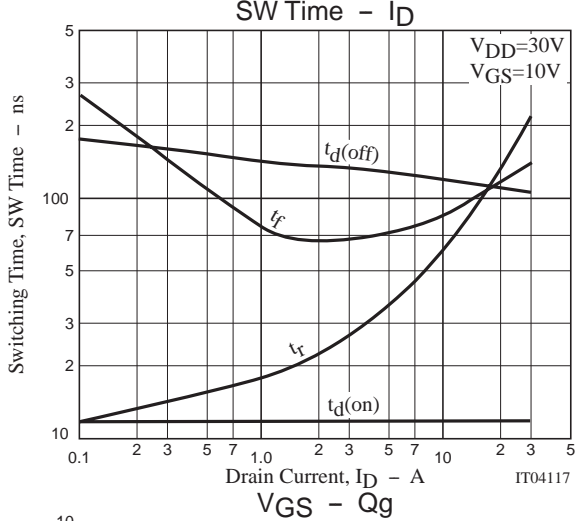
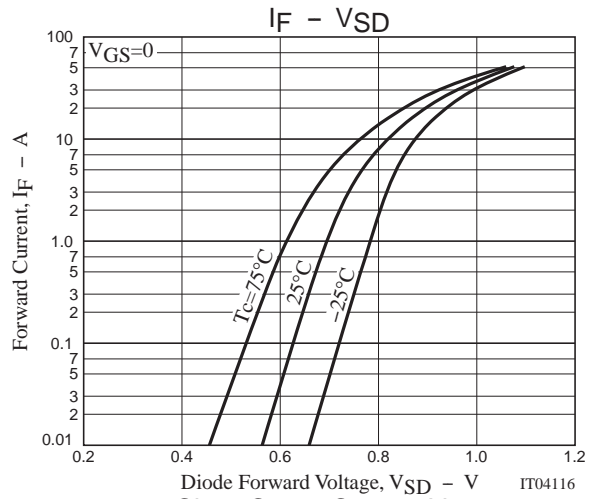
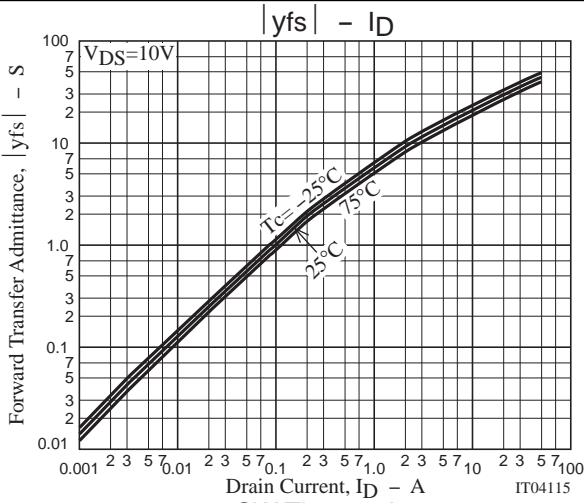
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		1000		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		280		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		100		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		12		ns
Rise Time	t _r	See specified Test Circuit.		72		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		120		ns
Fall Time	t _f	See specified Test Circuit.		90		ns
Total Gate Charge	Qg	V _{DS} =10V, V _{GS} =10V, I _D =25A		34		nC
Gate-to-Source Charge	Qgs	V _{DS} =10V, V _{GS} =10V, I _D =25A		5		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =10V, V _{GS} =10V, I _D =25A		8		nC
Diode Forward Voltage	V _{SD}	I _S =25A, V _{GS} =0	0.93		1.2	V

Switching Time Test Circuit



2SK3413LS



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