



ON Semiconductor®

ON Semiconductor
DATA SHEET**2SK4043LS** — N-Channel Silicon MOSFET
General-Purpose Switching Device
Applications**Features**

- Low ON-resistance.
- 2.5V drive.
- Avalanche resistance guarantee.

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		20	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	80	A
Allowable Power Dissipation	P _D		2.0	W
		T _c =25°C	20	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		147	mJ
Avalanche Current *2	I _{AV}		20	A

Note : *1 V_{DD}=10V, L=500μH, I_{AV}=20A

*2 L≤500μH, Single pulse

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	y _{fs}	V _{DS} =10V, I _D =10A	15	25		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =10A, V _{GS} =4V		16	21	mΩ
	R _{DS(on)2}	I _D =10A, V _{GS} =2.5V		17	24	mΩ

Marking : K4043

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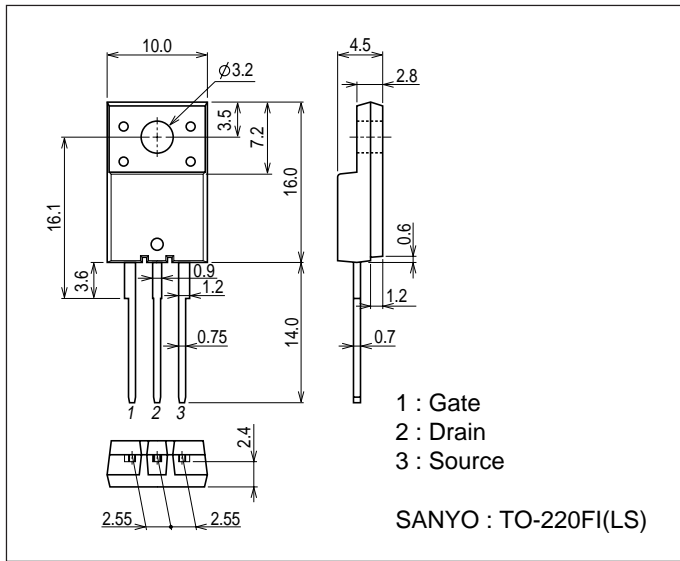
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		3000		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		360		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		300		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		27		ns
Rise Time	t_r	See specified Test Circuit.		190		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		370		ns
Fall Time	t_f	See specified Test Circuit.		280		ns
Total Gate Charge	Qg	$V_{DS}=15V, V_{GS}=4V, I_D=20A$		37		nC
Gate-to-Source Charge	Qgs	$V_{DS}=15V, V_{GS}=4V, I_D=20A$		3.9		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=15V, V_{GS}=4V, I_D=20A$		12.6		nC
Diode Forward Voltage	V_{SD}	$I_S=20A, V_{GS}=0V$		1.0	1.2	V

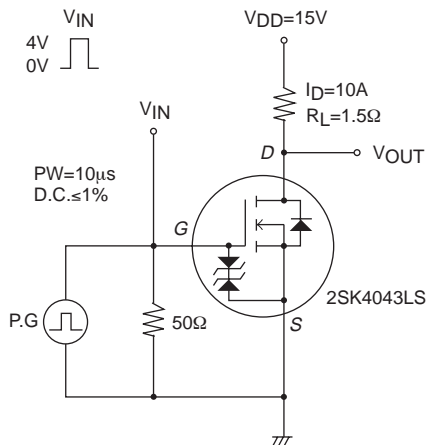
Package Dimensions

unit : mm

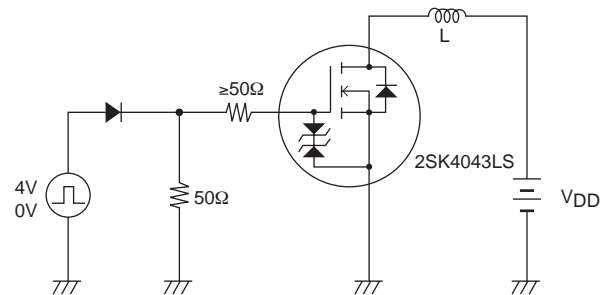
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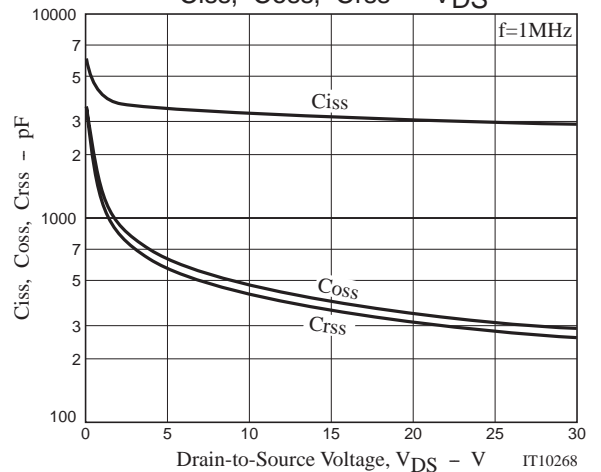
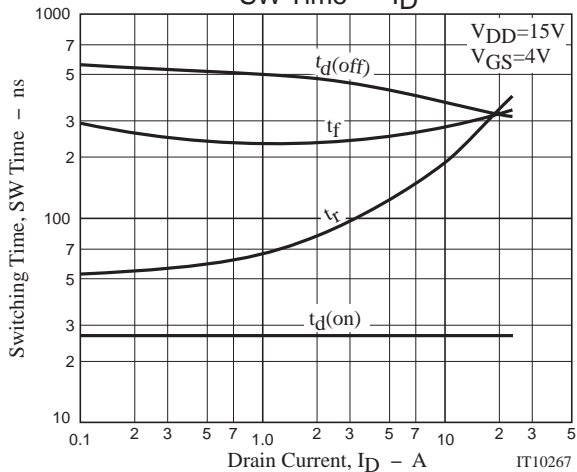
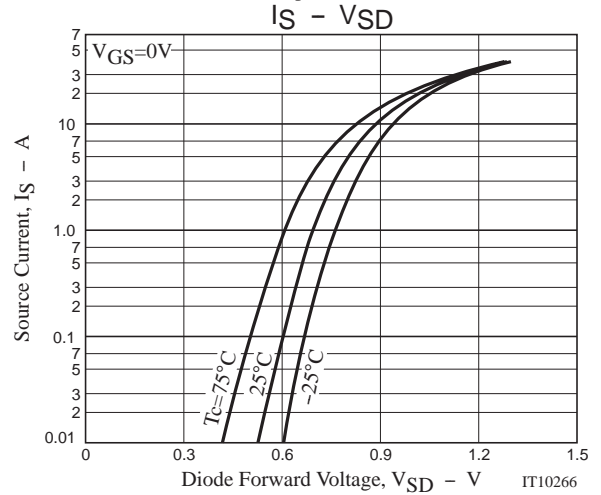
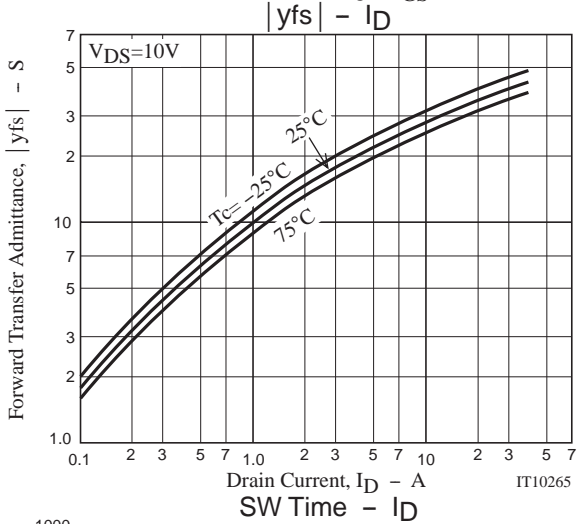
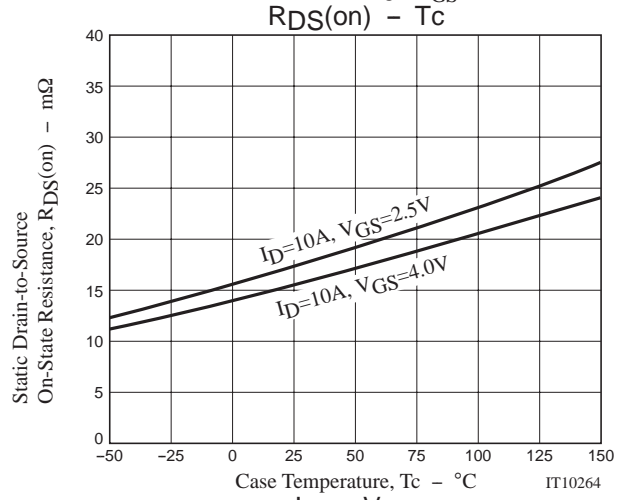
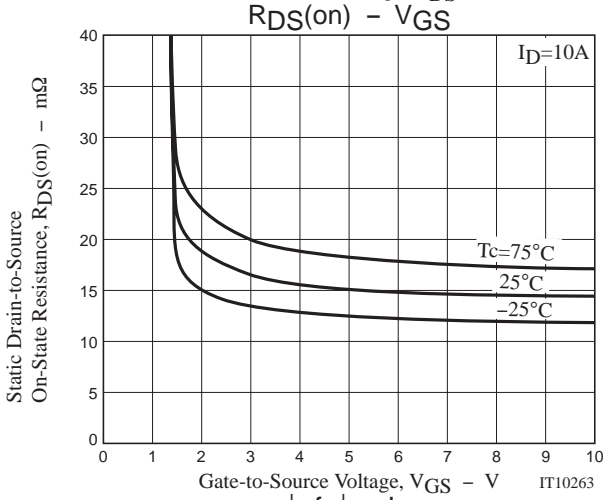
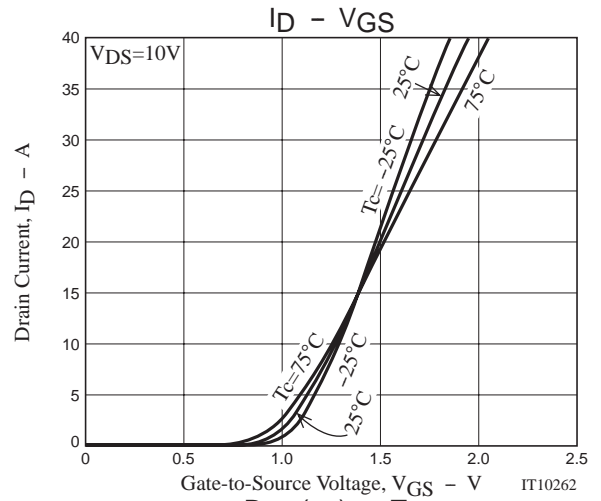
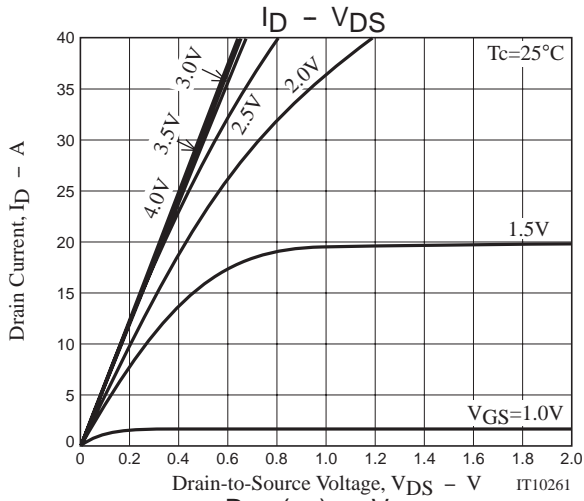
Switching Time Test Circuit



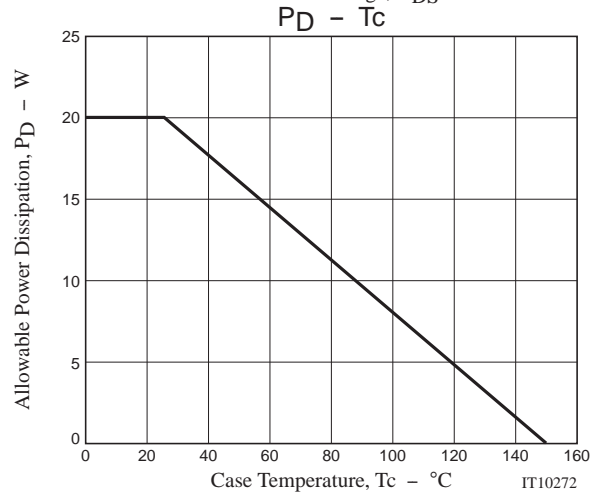
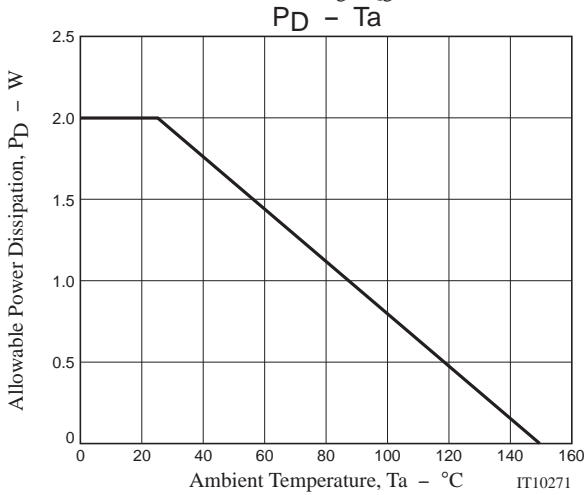
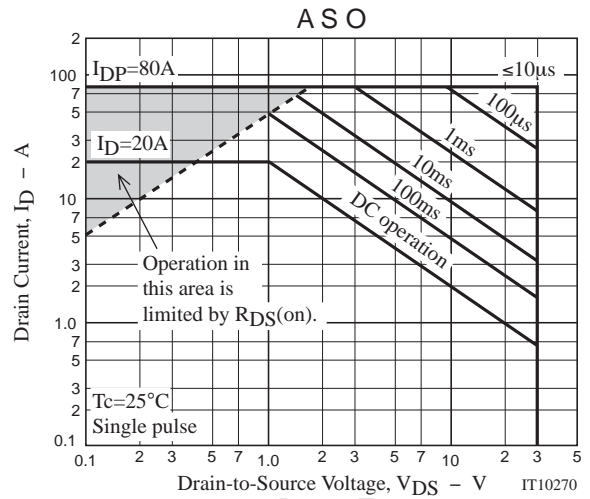
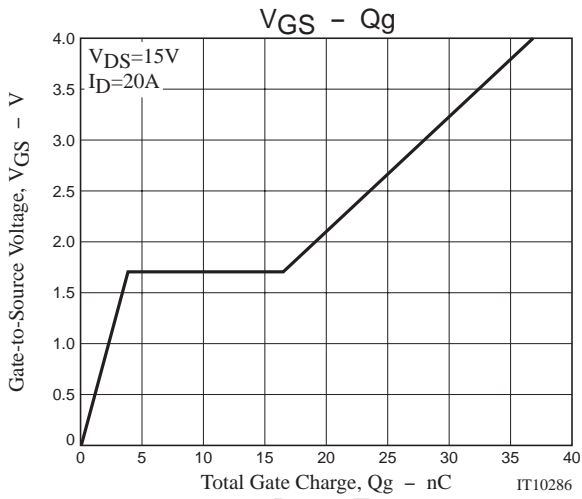
Avalanche Resistance Test Circuit



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