



ON Semiconductor®

**ON Semiconductor**  
**DATA SHEET****2SK3826** — N-Channel Silicon MOSFET  
**General-Purpose Switching Device**  
**Applications****Features**

- Low ON-resistance.
- 4V drive.
- Ultrahigh-speed switching.
- Motor drive, DC / DC converter.
- Avalanche resistance guarantee.

**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		100	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		26	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	104	A
Allowable Power Dissipation	P <sub>D</sub>		1.75	W
		T <sub>c</sub> =25°C	45	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E <sub>AS</sub>		80	mJ
Avalanche Current *2	I <sub>AV</sub>		26	A

Note : \*1 V<sub>DD</sub>=20V, L=200μH, I<sub>AV</sub>=26A

\*2 L≤200μH, Single pulse

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	100			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	1.2		2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =13A	11	19		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =13A, V <sub>GS</sub> =10V		46	60	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =13A, V <sub>GS</sub> =4V		57	80	mΩ

Marking : K3826

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# 2SK3826

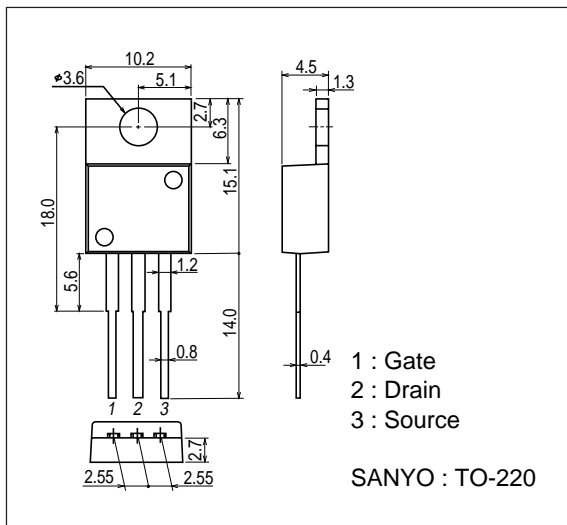
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		2150		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		160		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		110		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		20		ns
Rise Time	$t_r$	See specified Test Circuit.		34		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		185		ns
Fall Time	$t_f$	See specified Test Circuit.		62		ns
Total Gate Charge	Qg	$V_{DS}=50V, V_{GS}=10V, I_D=26A$		42		nC
Gate-to-Source Charge	Qgs	$V_{DS}=50V, V_{GS}=10V, I_D=26A$		7.2		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=50V, V_{GS}=10V, I_D=26A$		9.2		nC
Diode Forward Voltage	$V_{SD}$	$I_S=26A, V_{GS}=0$		1.0	1.2	V

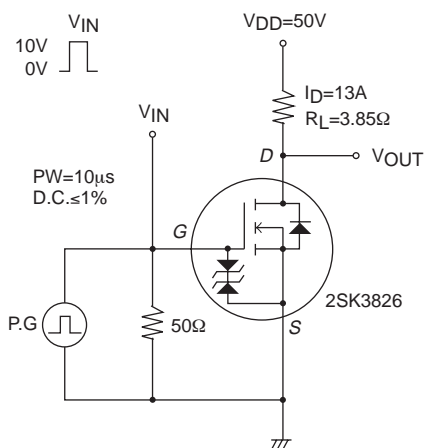
## Package Dimensions

unit : mm

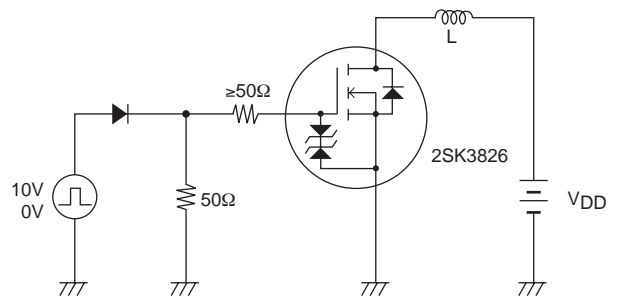
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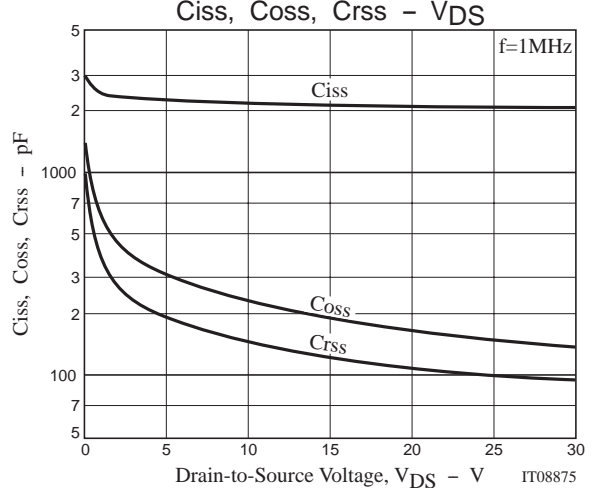
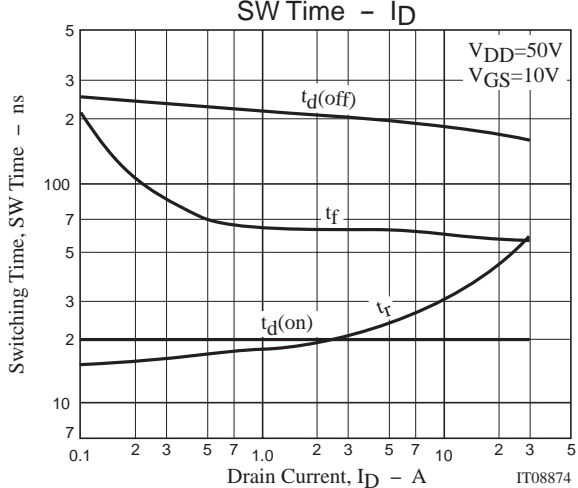
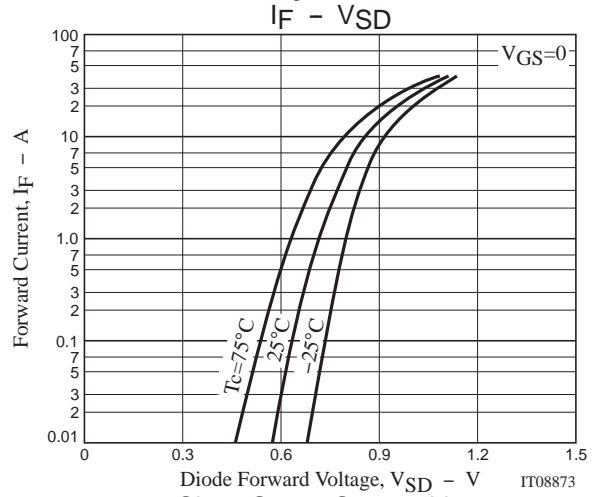
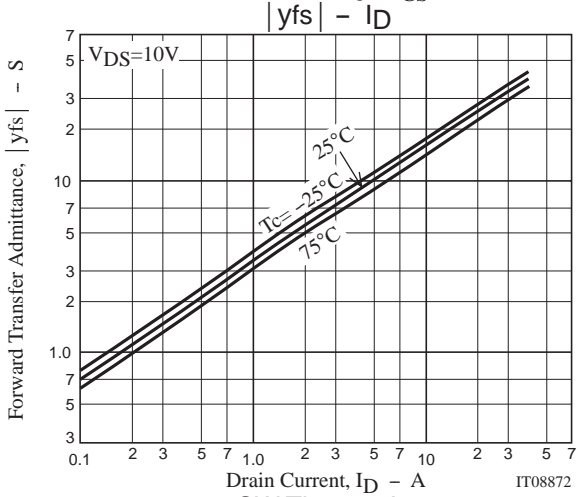
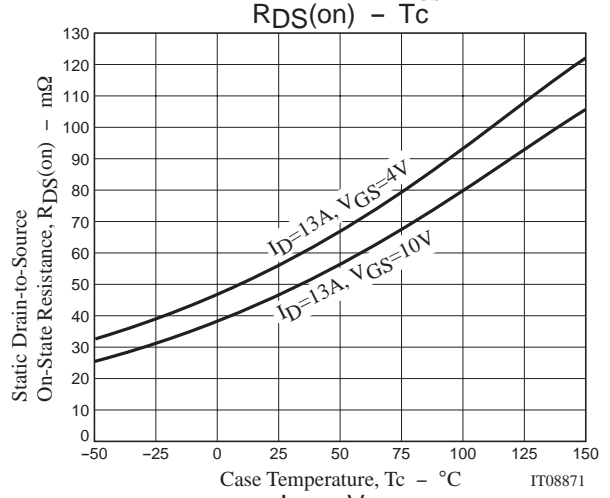
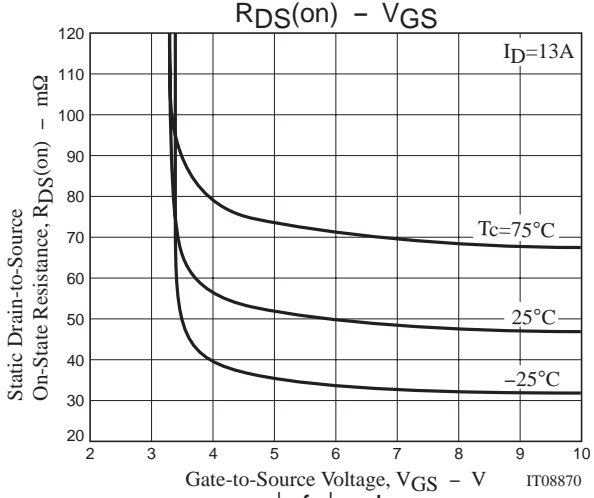
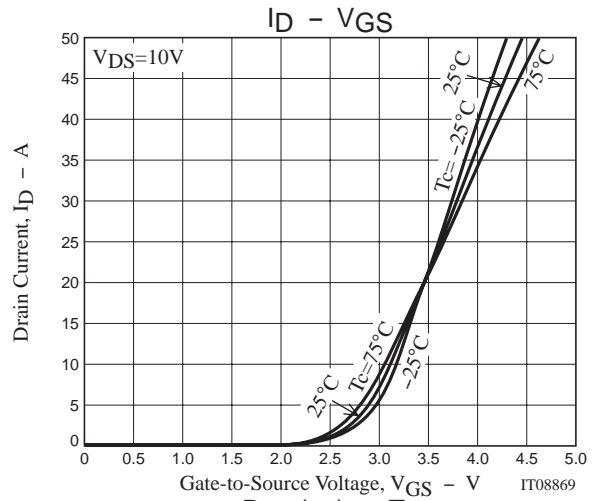
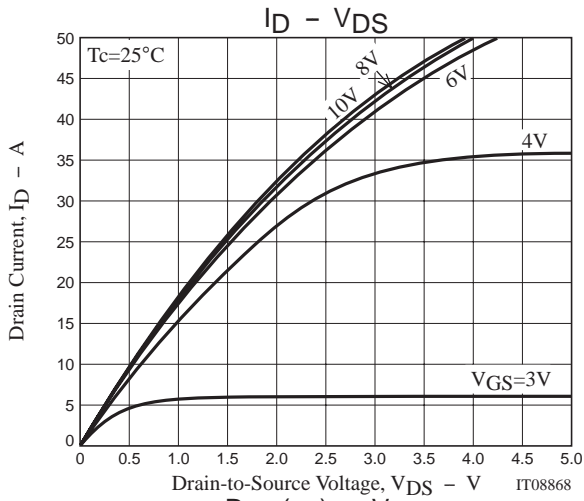


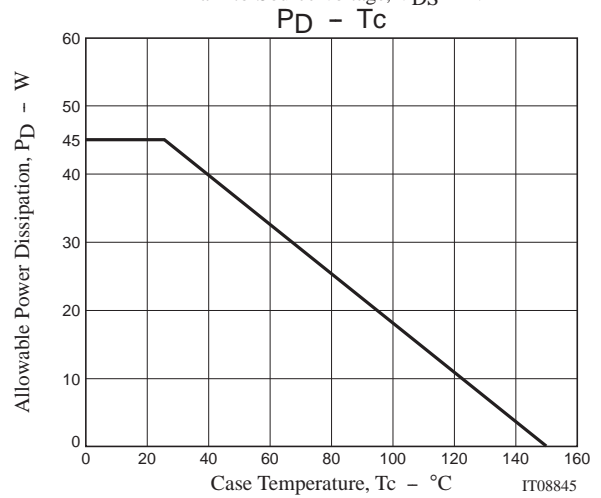
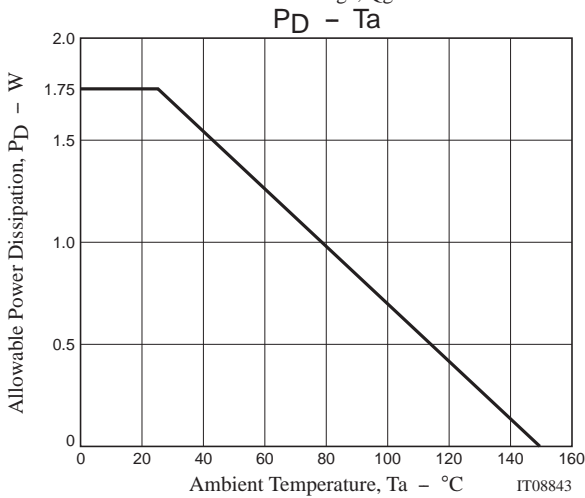
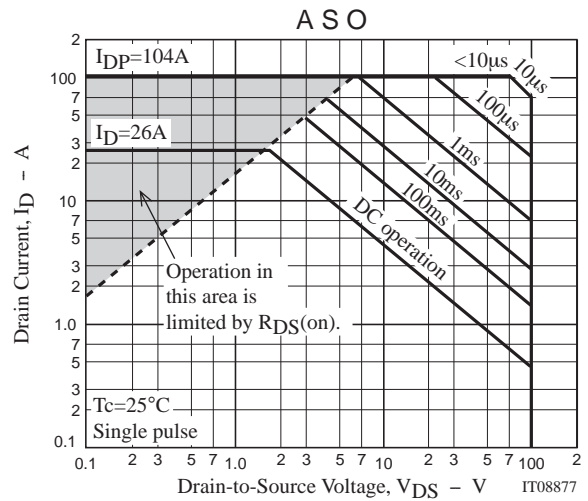
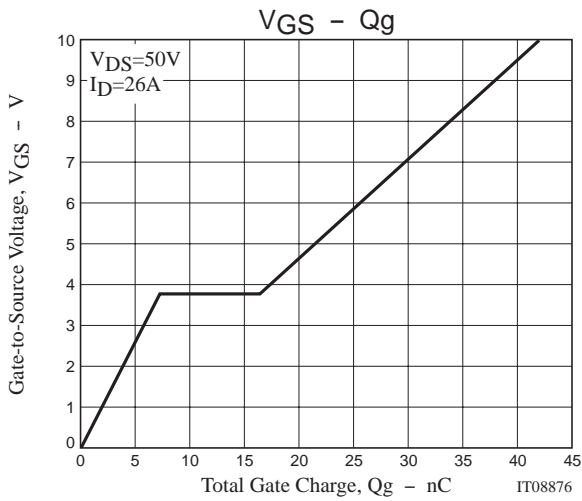
## Switching Time Test Circuit



## Avalanche Resistance Test Circuit







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