

**2SK2864**

Ultrahigh-Speed Switching Applications

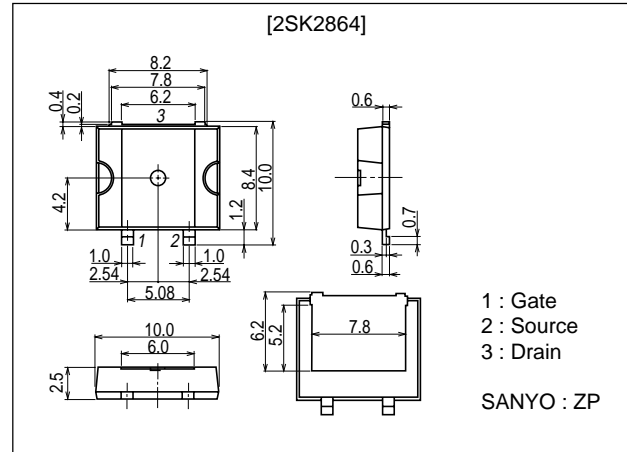
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- Enables simplified fabrication, high-density mounting, and miniaturization in end products due to the surface mountable package.

Package Dimensions

unit : mm

2128



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		200	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		20	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	80	A
Allowable Power Dissipation	P_D	$T_c=25^\circ\text{C}$	50	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0$	200			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=\pm 100\mu\text{A}$, $V_{DS}=0$	± 20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=200\text{V}$, $V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	2.0		4.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=10\text{A}$	6	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=10\text{A}$, $V_{GS}=10\text{V}$		90	120	$\text{m}\Omega$

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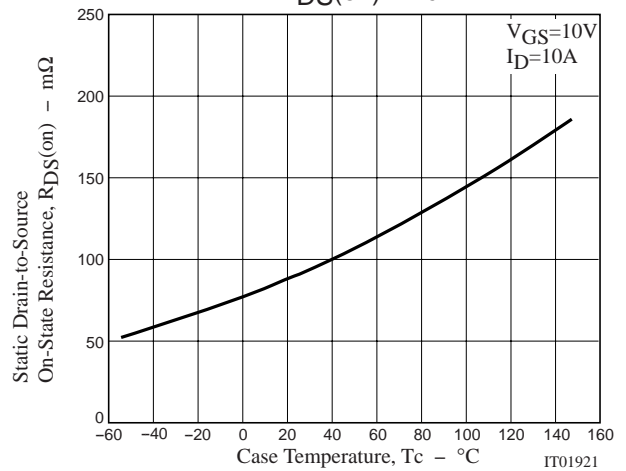
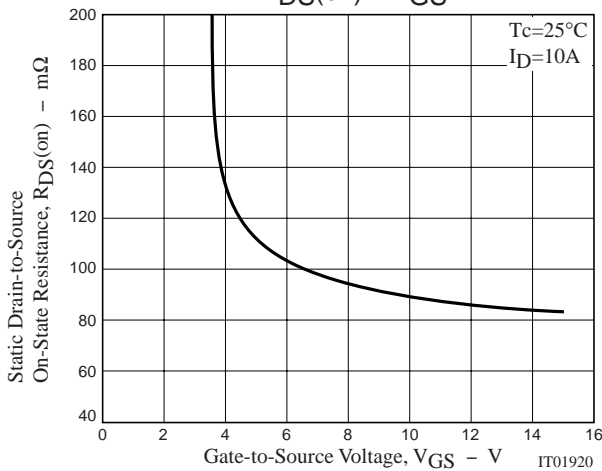
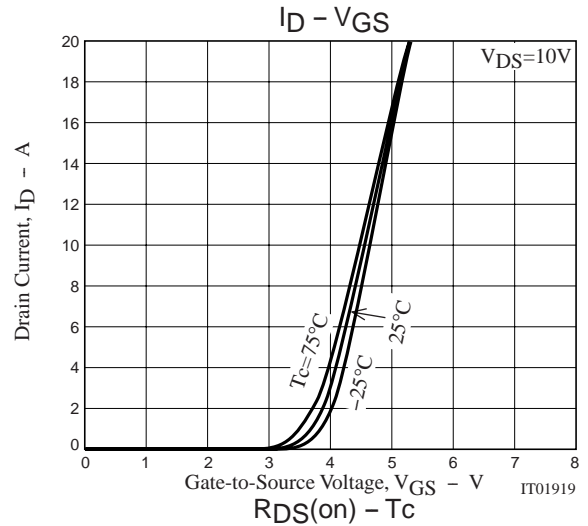
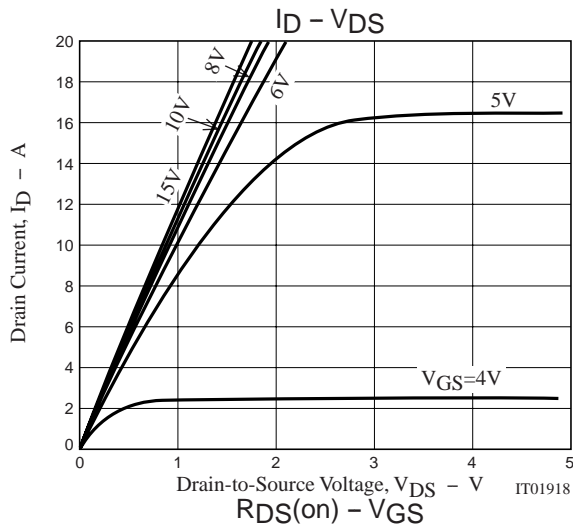
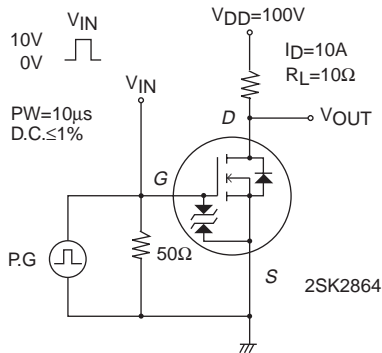
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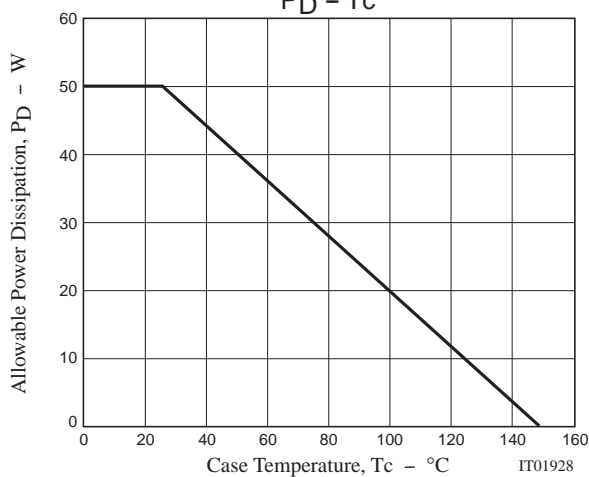
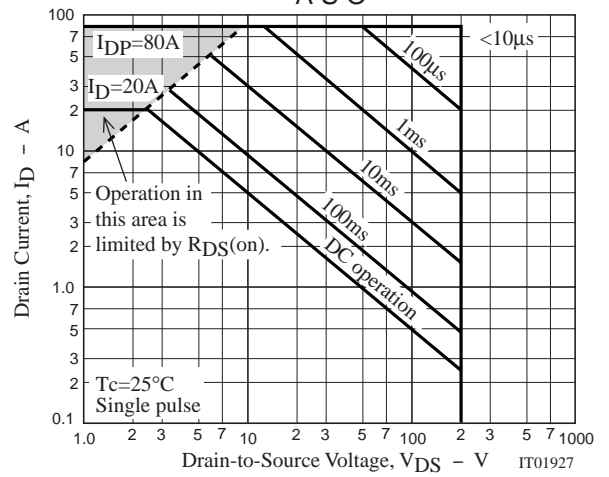
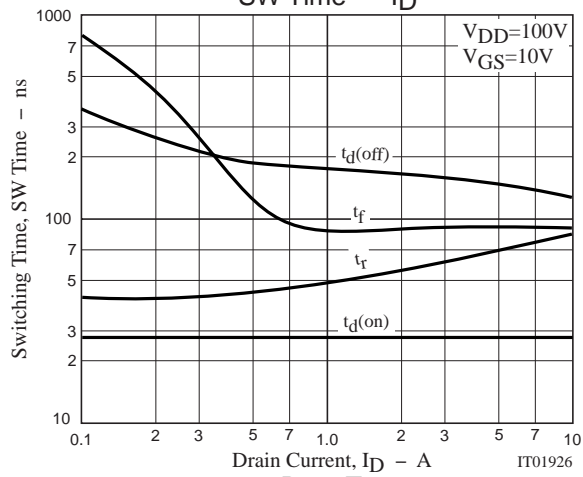
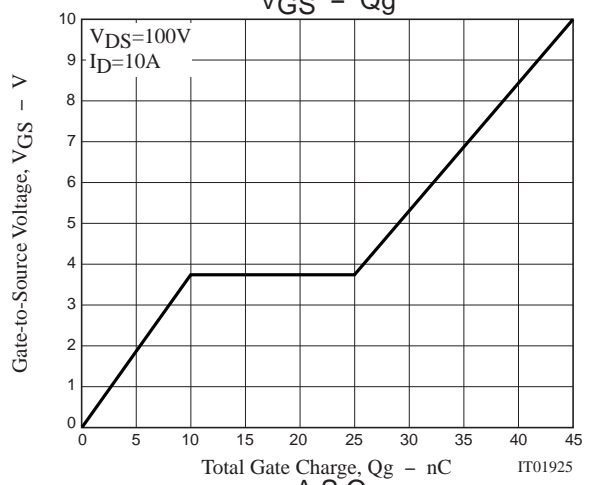
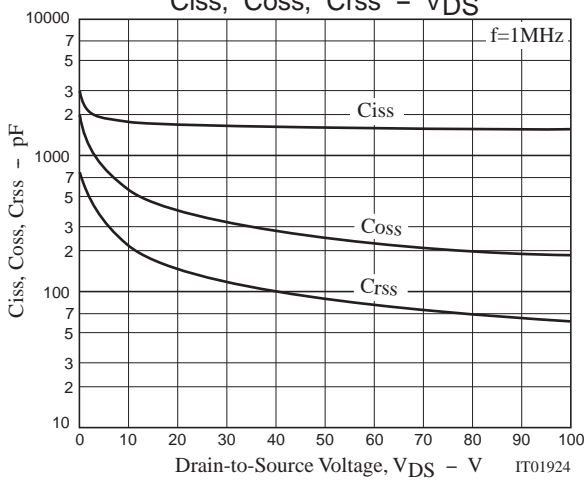
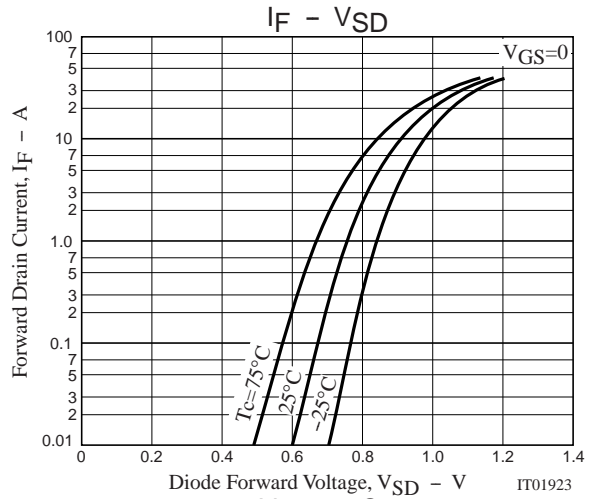
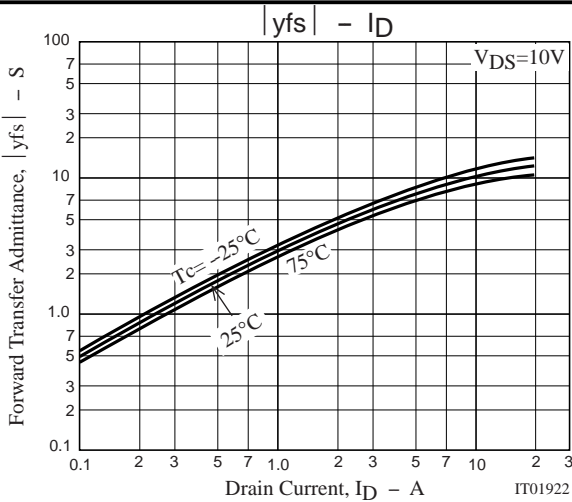
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss1	$V_{DS}=0, f=1\text{MHz}$		3000	3800	pF
	Ciss2	$V_{DS}=20\text{V}, f=1\text{MHz}$		1700	2150	pF
Output Capacitance	Coss	$V_{DS}=20\text{V}, f=1\text{MHz}$		400	420	pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20\text{V}, f=1\text{MHz}$		150	185	pF
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit		28	35	ns
Rise Time	t_r	See specified Test Circuit		85	110	ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit		130	165	ns
Fall Time	t_f	See specified Test Circuit		90	105	ns
Diode Forward Voltage	V_{SD}	$I_S=20\text{A}, V_{GS}=0$		1.0	1.5	V
Gate resistance	R_g	$f=1\text{MHz}$	1.0	2.0	3.0	Ω

Switching Time Test Circuit





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