



## Ultrahigh-Speed Switching Applications

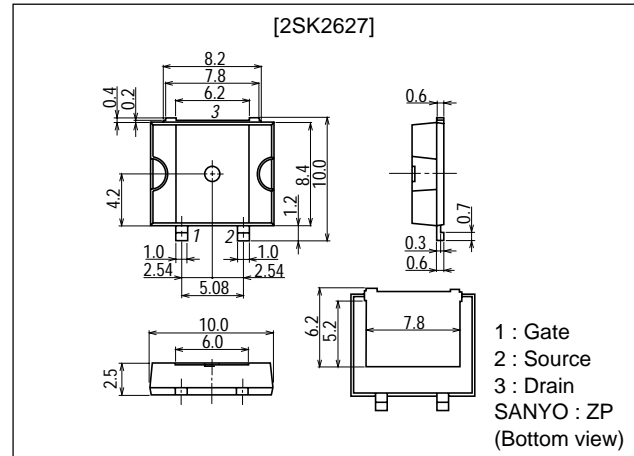
### Features

- Low ON-resistance.
- Low Qg.

### Package Dimensions

unit:mm

2128



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		600	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		5	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10 \mu s$ , duty cycle $\leq 1\%$	20	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ C$	40	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$ , $V_{GS} = 0$	600			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 600V$ , $V_{GS} = 0$			1.0	mA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 30V$ , $V_{DS} = 0$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	3.5		5.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$ , $I_D = 2.5A$	1.5	3.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D = 2.5A$ , $V_{GS} = 15V$		1.5	2.0	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = 20V$ , $f = 1MHz$		700		pF
Output Capacitance	$C_{oss}$	$V_{DS} = 20V$ , $f = 1MHz$		220		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 20V$ , $f = 1MHz$		110		pF

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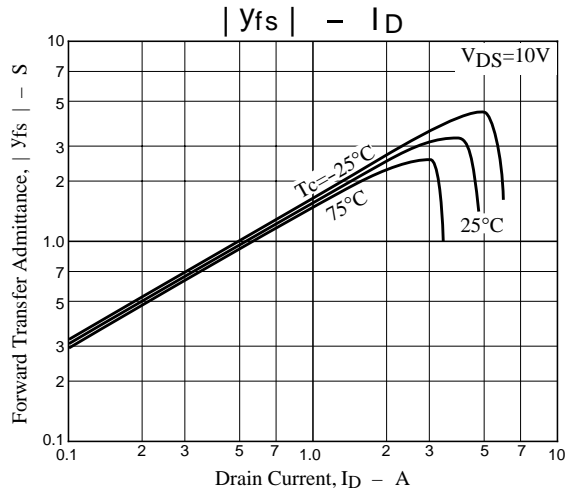
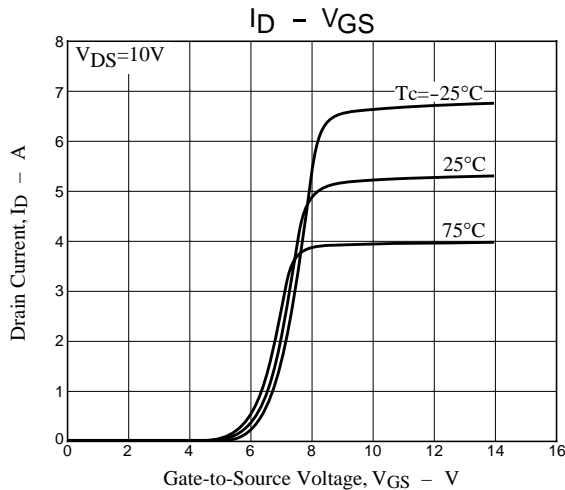
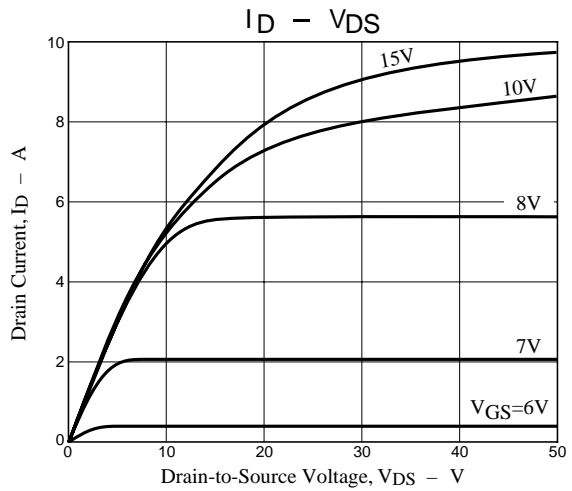
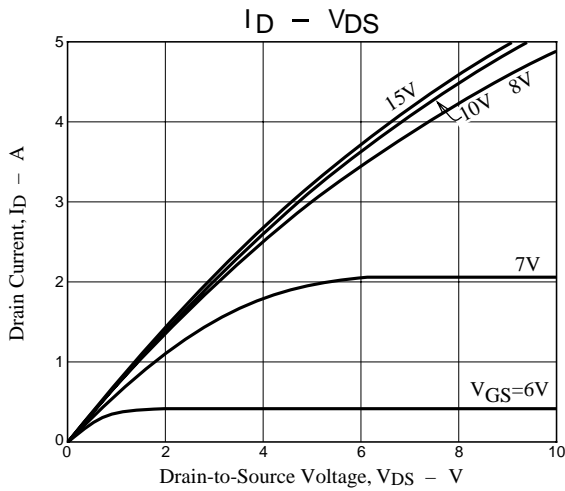
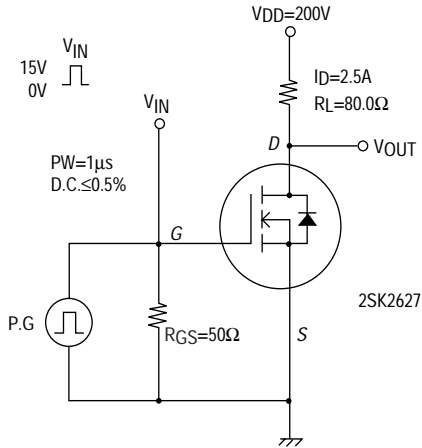
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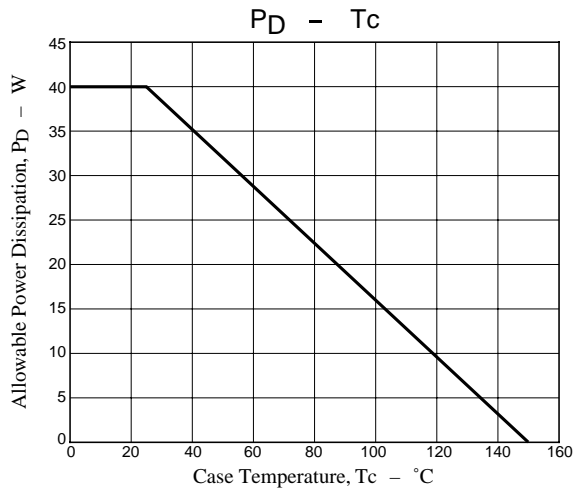
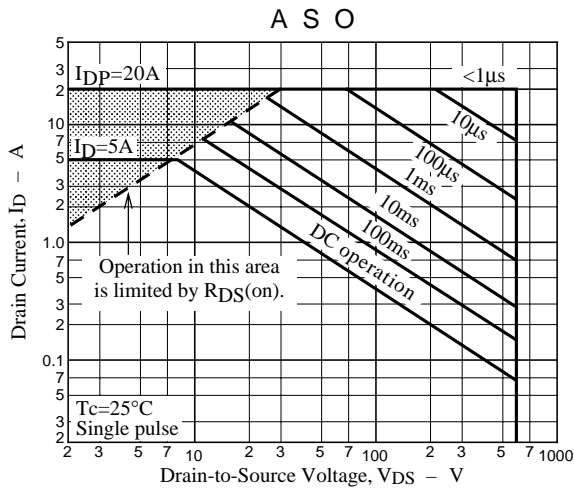
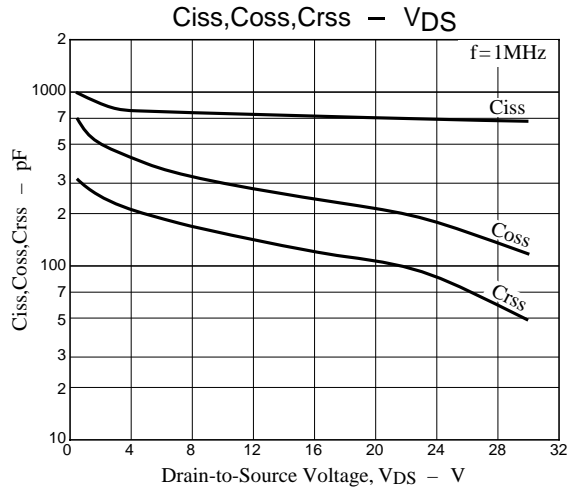
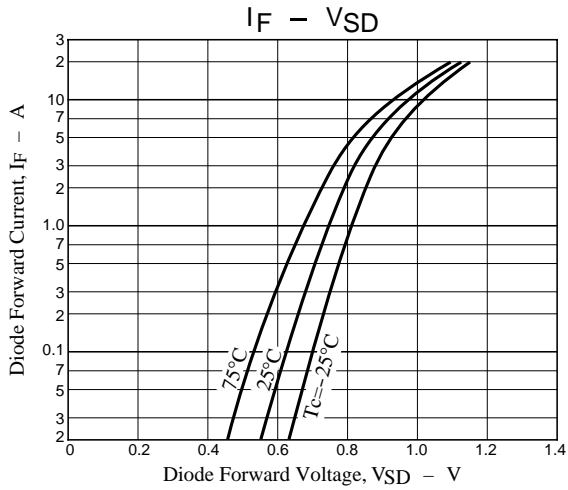
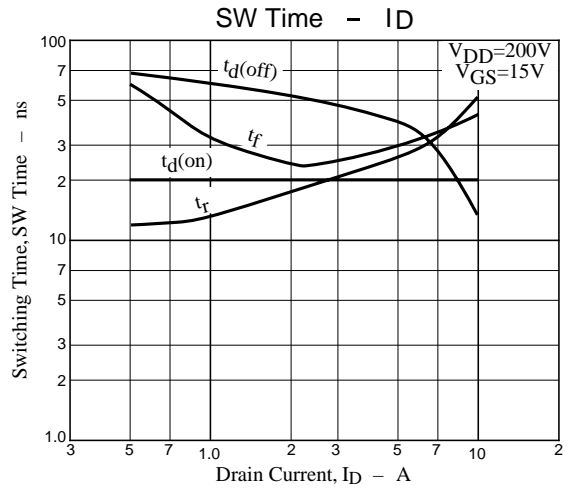
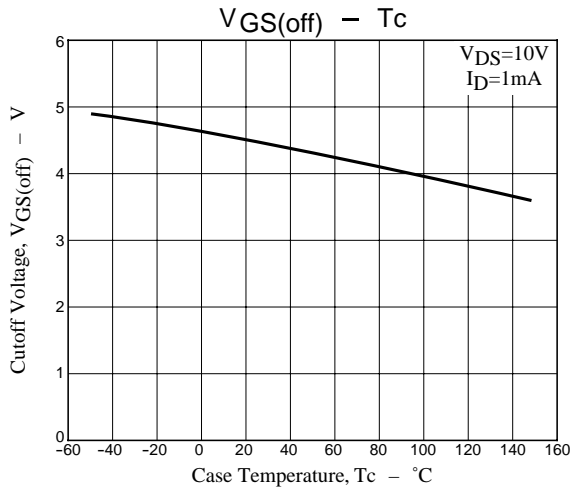
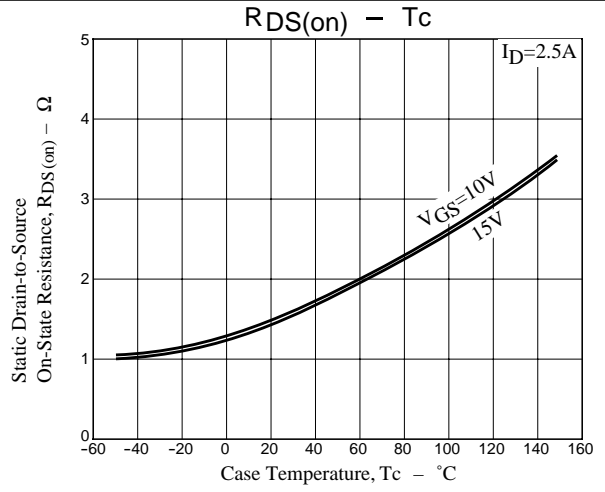
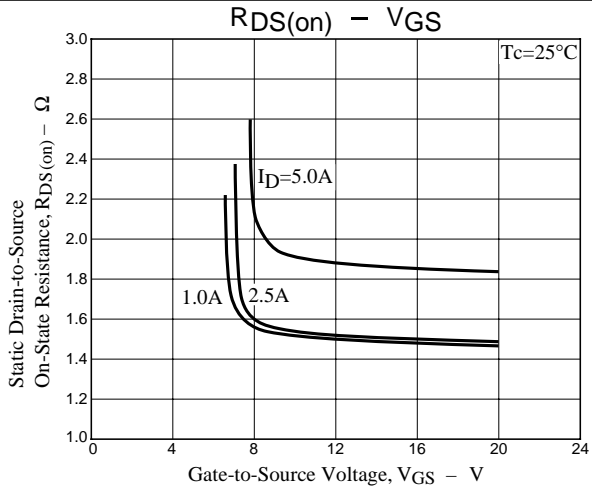
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=200V, V_{GS}=10V, I_D=5A$		20		nC
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		20		ns
Rise Time	$t_r$	See specified Test Circuit		20		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		50		ns
Fall Time	$t_f$	See specified Test Circuit		25		ns
Diode Forward Voltage	$V_{SD}$	$I_S=5A, V_{GS}=0$	0.87	1.2		V

## Switching Time Test Circuit



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