

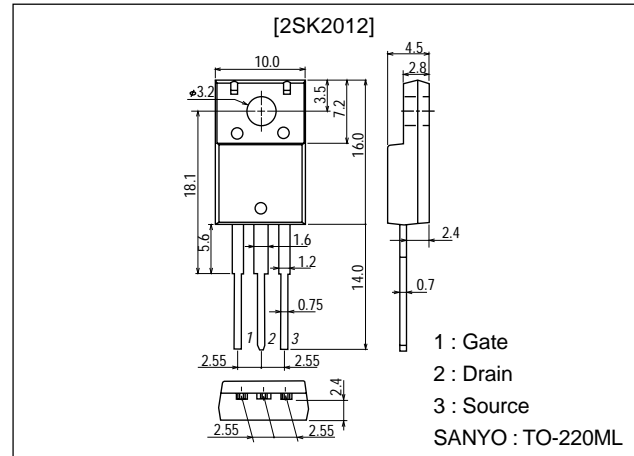
**2SK2012****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Micaless package facilitating mounting.

**Package Dimensions**

unit:mm

2063A

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		250	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		18	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	72	A
Allowable Power Dissipation	$P_D$		2.0	W
		$T_c = 25^\circ\text{C}$	40	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	$V_{(BR)DSS}$	$I_D = 1\text{mA}$ , $V_{GS} = 0$	250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu\text{A}$ , $V_{DS} = 0$	$\pm 30$			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 250\text{V}$ , $V_{GS} = 0$			100	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 25\text{V}$ , $V_{DS} = 0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$ , $I_D = 1\text{mA}$	1.5		2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}$ , $I_D = 12\text{A}$	11	18		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D = 12\text{A}$ , $V_{GS} = 10\text{V}$		0.12	0.16	$\Omega$

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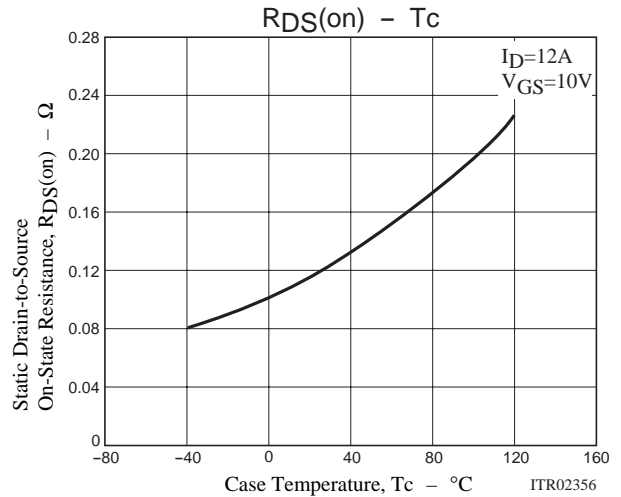
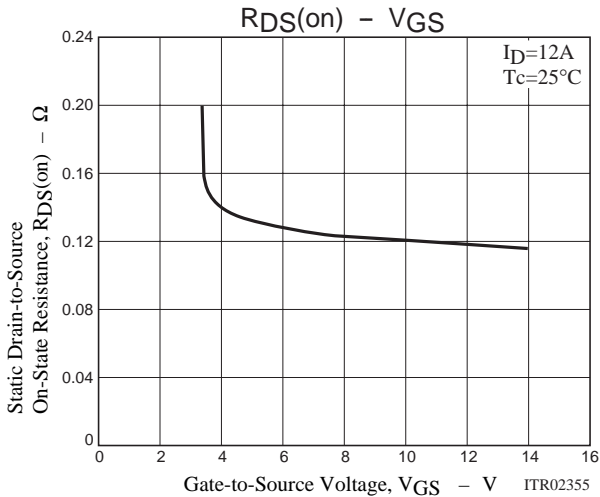
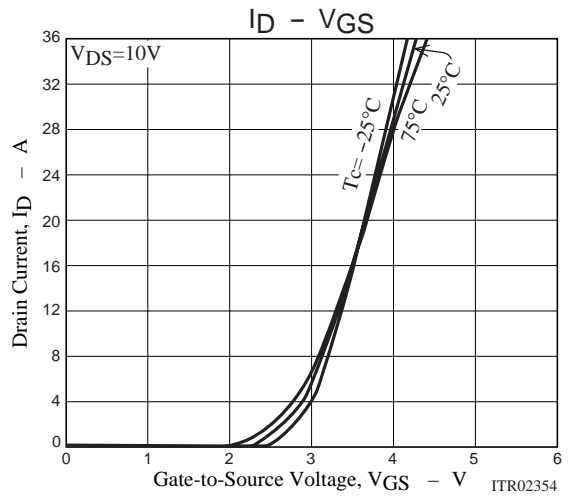
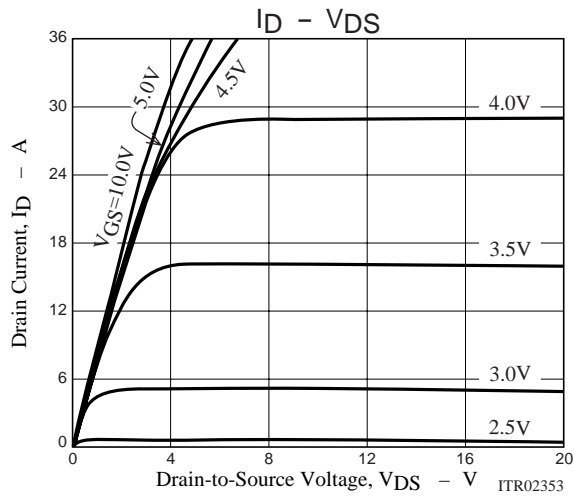
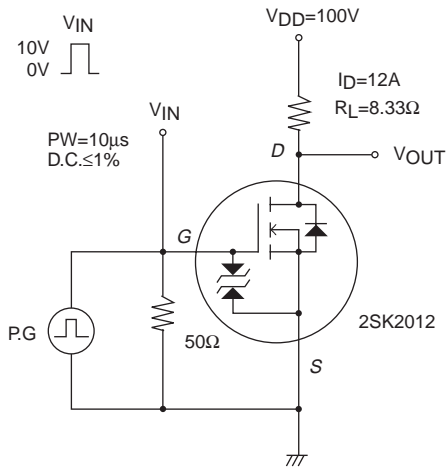
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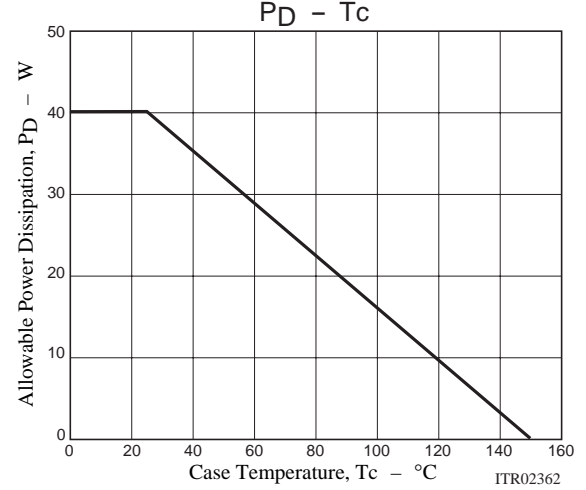
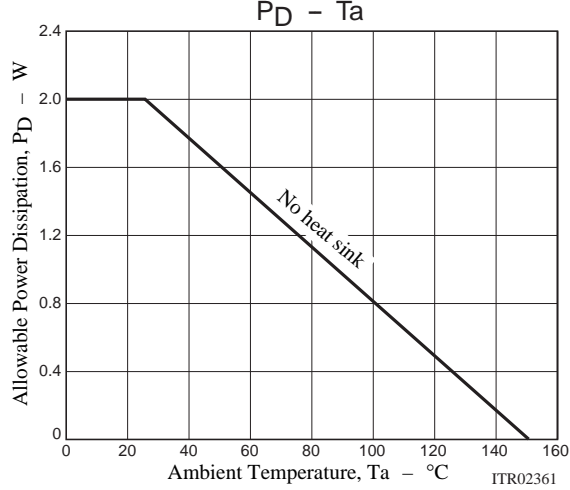
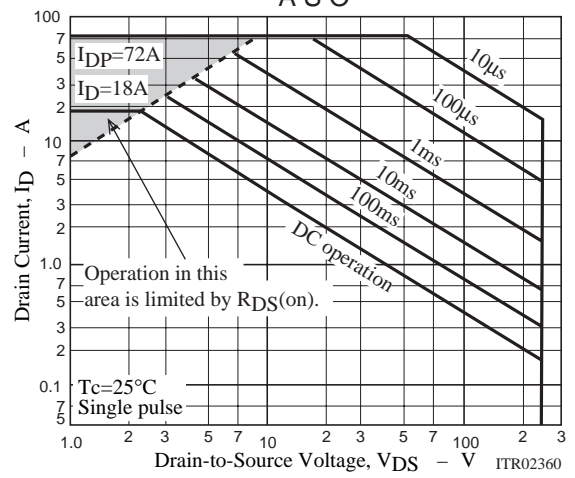
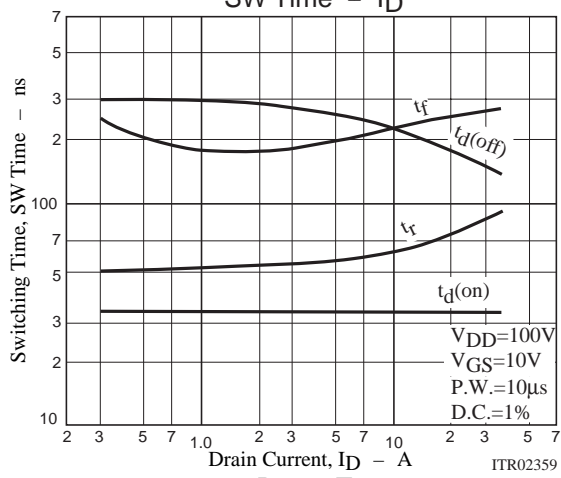
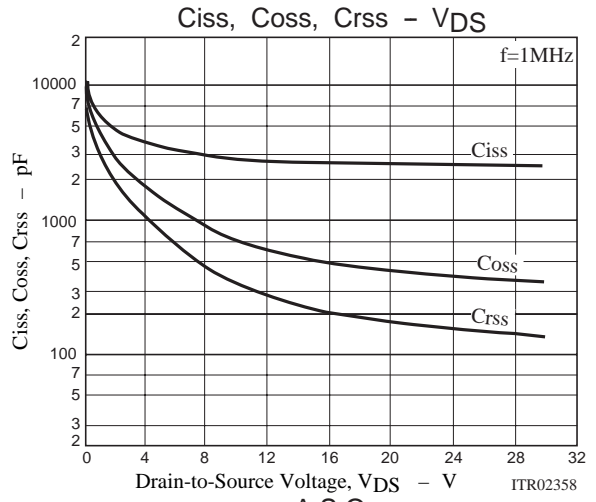
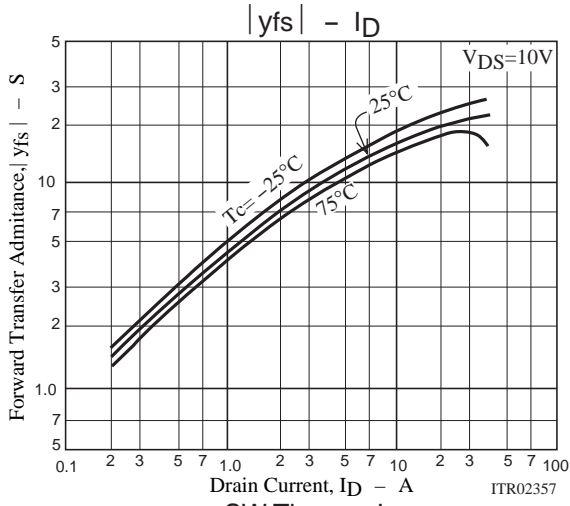
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		2700		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		450		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		180		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		35		ns
Rise Time	$t_r$	See specified Test Circuit		65		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		210		ns
Fall Time	$t_f$	See specified Test Circuit		235		ns
Diode Forward Voltage	$V_{SD}$	$I_S=18A, V_{GS}=0$		1.0	1.5	V

## Switching Time Test Circuit



# 2SK2012



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