

2SJ306

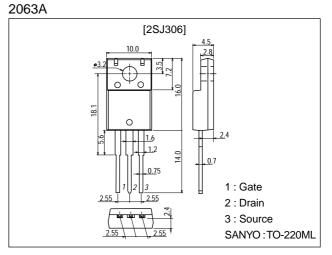
Ultrahigh-Speed Switching Applications

Features

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

Package Dimensions

unit:mm



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		-250	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	۱ _D		-3	A
Drain Current (Pulse)	I _{DP}	PW≤10µs, duty cycle≤1%	-12	A
Allowable Power Dissipation	P-		2.0	W
	PD	Tc=25°C	25	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°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	-250			V
Gate-to-Source Breakdown Voltage	V(BR)GSS	I _G =±100µA, V _{DS} =0	±30			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =-250V, V _{GS} =0			-100	μΑ
Gate-to-Source Leakage Current	IGSS	$V_{GS}=\pm 25V, V_{DS}=0$			±10	μΑ
Cutoff Voltage	VGS(off)	V_{DS} =-10V, I _D =-1mA	-1.5		-2.5	V
Forward Transfer Admittance	yfs	V _{DS} =-10V, I _D =-1.5A	1.5	2.5		S
Static Drain-to-Source ON-State Resistance	R _{DS(on)}	I _D =-1.5A, V _{GS} =-10V		1.5	2.0	Ω

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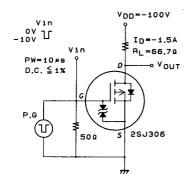
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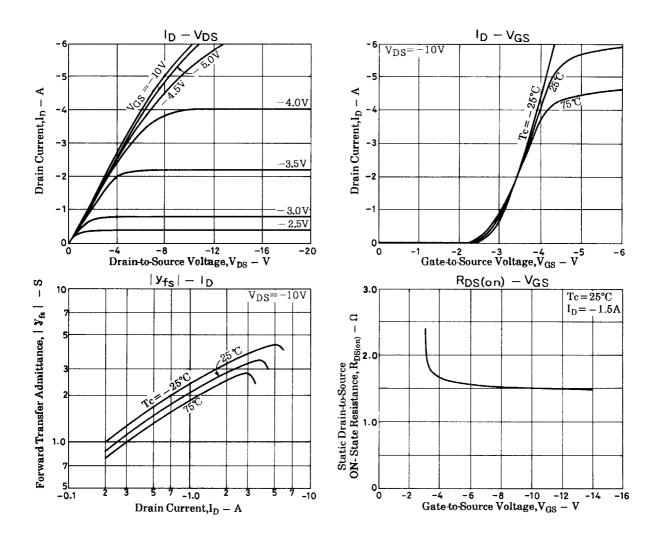
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Parameter	Symbol	Conditions	Ratings			Unit
	Symbol		min	typ	max	
Input Capacitance	Ciss	V _{DS} =-20V, f=1MHz		600		pF
Output Capacitance	Coss	V _{DS} =-20V, f=1MHz		110		pF
Reverse Transfer Capacitance	Crss	V _{DS} =-20V, f=1MHz		50		pF
Turn-ON Delay Time	^t d(on)	See specified Test Circuit		14		ns
Rise Time	tr	See specified Test Circuit		18		ns
Turn-OFF Delay Time	^t d(off)	See specified Test Circuit		75		ns
Fall Time	t _f	See specified Test Circuit		65		ns
Diode Forward Voltage	V _{SD}	I _S =-3A, V _{GS} =0		-1.0	-1.5	V

Switching Time Test Circuit





2SJ306 R_{DS(on)} - Tc Ciss, Coss, Crss – V_{DS} 3.0 $I_{D} = -1.5A$ f=1 M HzStatic Drain-to-Source ON-State Resistance, R_{DS(on)} – A 1000 104 Ciss, Coss, Crss - pF 7 Ciss 105 Coss 100 Cres 2 10년 0 0└ -80 0 40 80 Case Temperature,Tc – °C -8 -12 -16 -20 -24 -28 Drain-to-Source Voltage, V_{DS} - V -40 120 160 -4 -32 SW Time - ID ASO 2 $\begin{array}{c} v_{DD} = -100V \\ v_{GS} = -10V \end{array}$ IDP -10 Switching Time, SW Time - ns 100 Drain Current,I_D – A to off I_D Operation in this area is limited by RDS(on) .0 12 tr 00 operation t_{d(on)} 10 -0.1 Tc = 25°C 1 $\frac{7}{5} \frac{\text{Single pulse}}{3} \frac{5}{7} \frac{7}{-10}$ 57_{-1.0}2 Drain Current,I_D – A 7_{-10} 2 3 5 7_{-10} 2 Drain to Source Voltage, $V_{DS} - V$ 5 7 -10 3 -0.1 P_D – Ta P_D – Tc 2.4 28 Allowable Power Dissipation, $P_D - W$ Allowable Power Dissipation, $P_{\rm D}-W$ 25 20 20 1.6 No hearsing 16 1.2 12 0.8 8 0.4 of oL 0 140 60 80 100 120 160 20 20 40 100 120 140 60 80 160

Ambient Temperature, Ta - °C

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Case Temperature, Tc - °C

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