



SCH1302

Ultrahigh-Speed Switching Applications

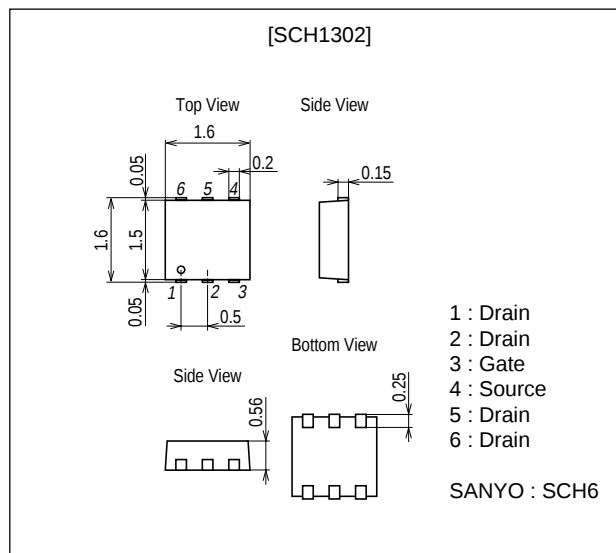
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Package Dimensions

unit : mm

2221



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		-20	V
Gate-to-Source Voltage	V_{GSS}		± 10	V
Drain Current (DC)	I_D		-2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-8	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm ² ×0.8mm)	0.8	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0$	-20			V
Zero-Gate Voltage Drain Current	I_{DSS1}	$V_{DS} = -20V, V_{GS} = 0$			-10	μA
	I_{DSS2}	$V_{DS} = -4V, V_{GS} = 0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS1}	$V_{GS} = \pm 8V, V_{DS} = 0$			± 10	μA
	I_{GSS2}	$V_{GS} = \pm 4V, V_{DS} = 0$			± 1	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-0.3		-1.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -1A$	1.8	3.0		S

Marking : JB

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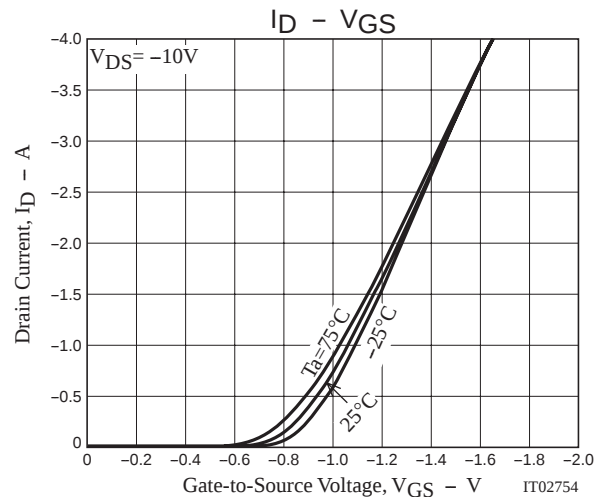
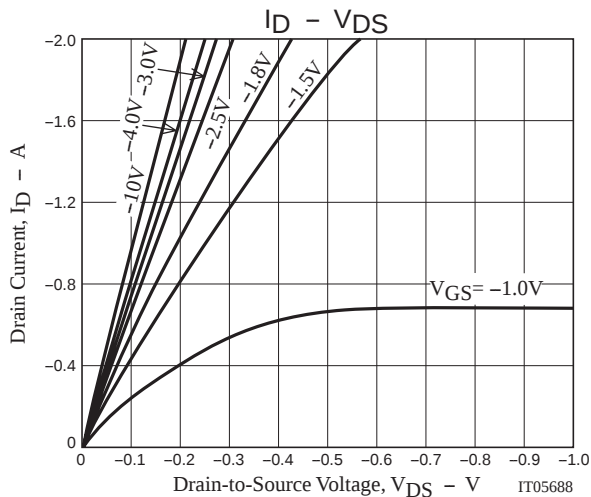
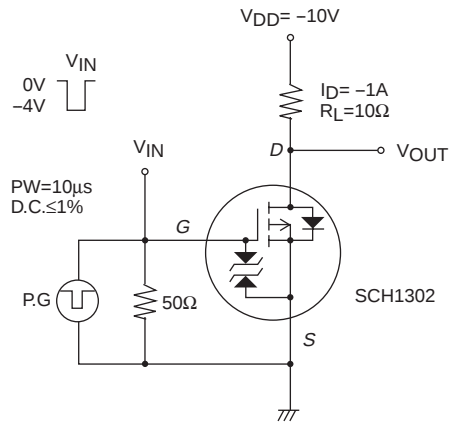
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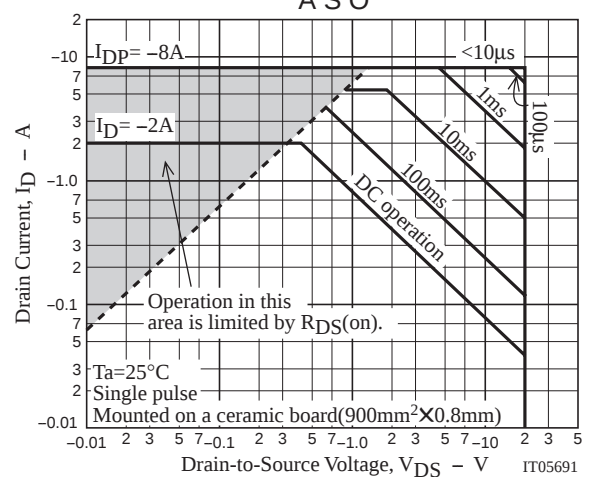
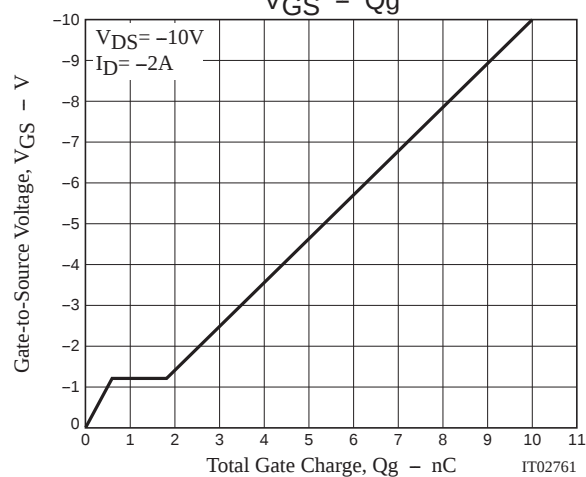
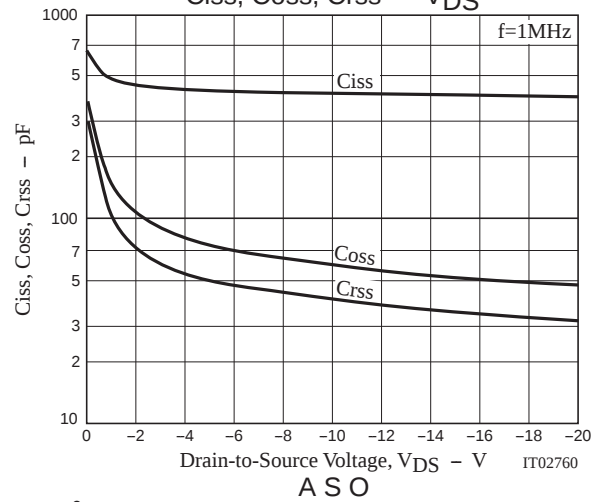
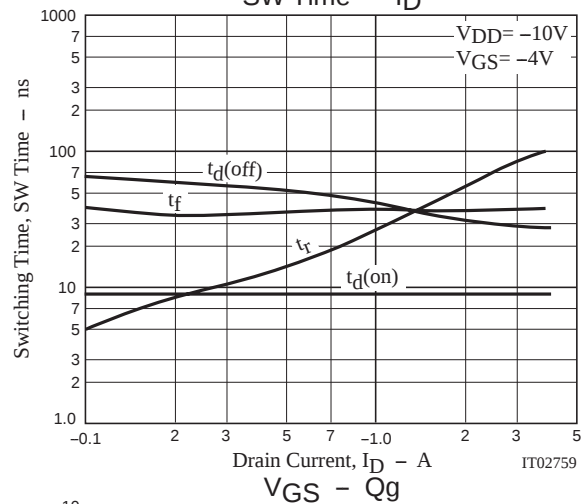
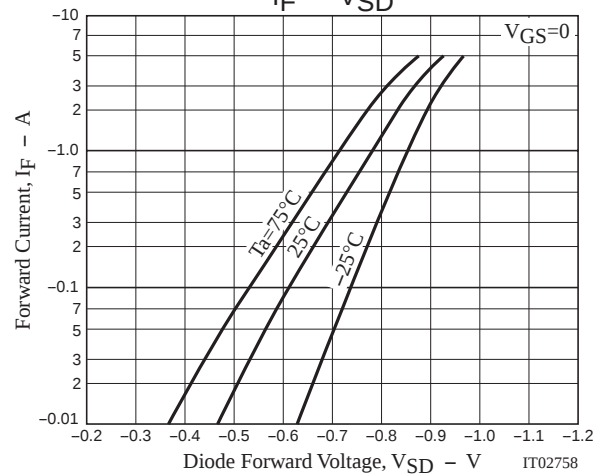
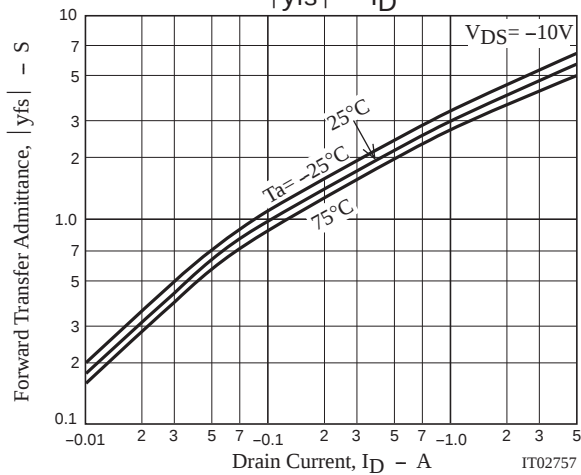
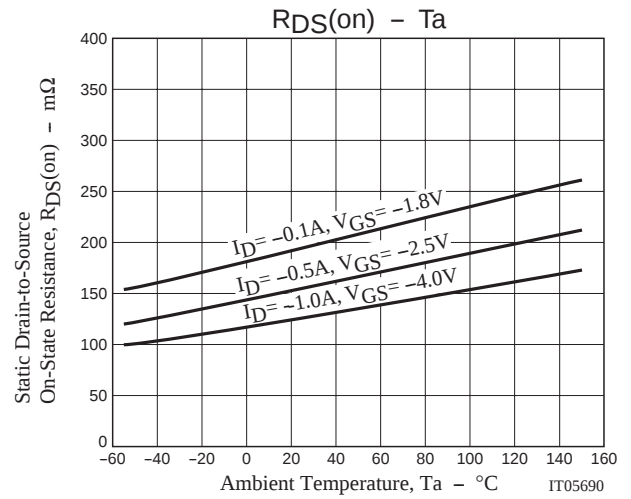
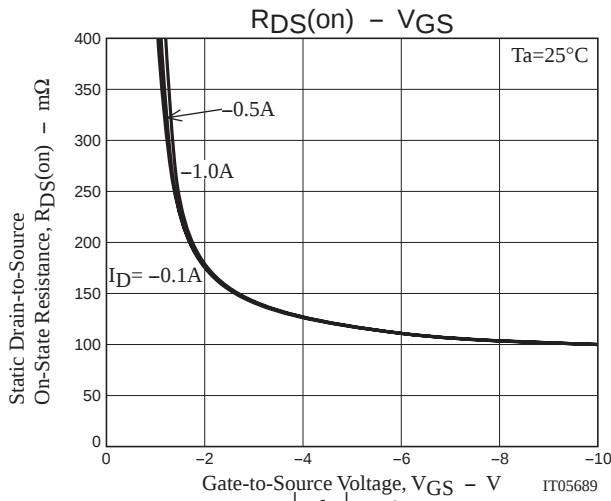
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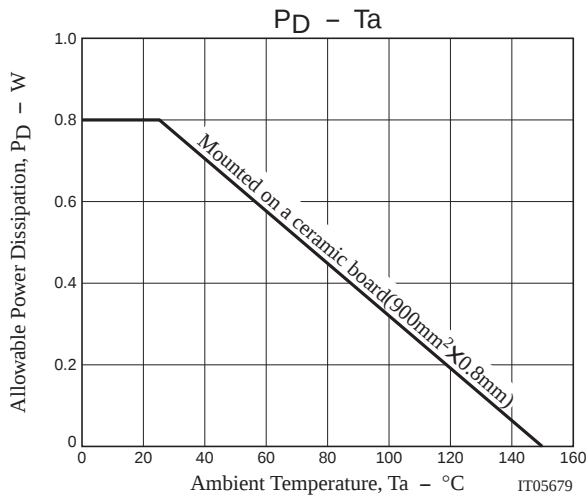
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1A, V_{GS} = -4V$		125	165	$m\Omega$
	$R_{DS(on)2}$	$I_D = -0.5A, V_{GS} = -2.5V$		155	220	$m\Omega$
	$R_{DS(on)3}$	$I_D = -0.1A, V_{GS} = -1.8V$		195	280	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -10V, f = 1MHz$		410		pF
Output Capacitance	C_{oss}	$V_{DS} = -10V, f = 1MHz$		60		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -10V, f = 1MHz$		40		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		9		ns
Rise Time	t_r	See specified Test Circuit.		27		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		42		ns
Fall Time	t_f	See specified Test Circuit.		38		ns
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -10V, I_D = -2A$		10		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -10V, I_D = -2A$		0.6		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -10V, V_{GS} = -10V, I_D = -2A$		1.2		nC
Diode Forward Voltage	V_{SD}	$I_S = -2A, V_{GS} = 0$		-0.88	-1.2	V

Switching Time Test Circuit







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