

**2SJ653**

General-Purpose Switching Device Applications

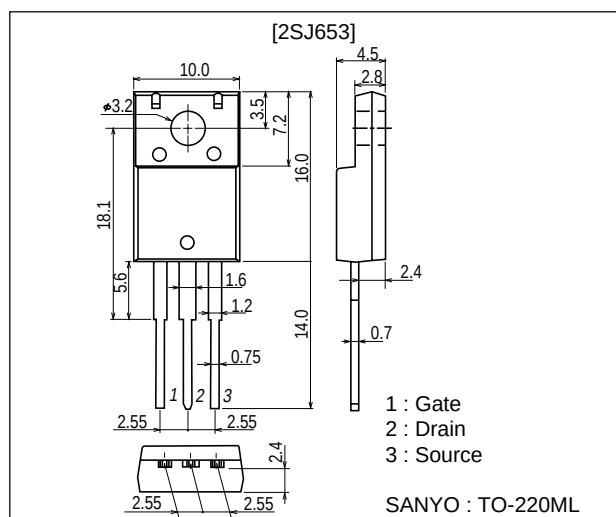
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- Motor drive, DC / DC converter.

Package Dimensions

unit : mm

2063A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		-60	V
Gate-to-Source Voltage	V_{GS}		±20	V
Drain Current (DC)	I_D		-37	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	-148	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c = 25^\circ C$	35	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA$, $V_{GS} = 0$	-60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -60V$, $V_{GS} = 0$			-1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V$, $I_D = -1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V$, $I_D = -19A$	26.5	38		S

Marking : J653

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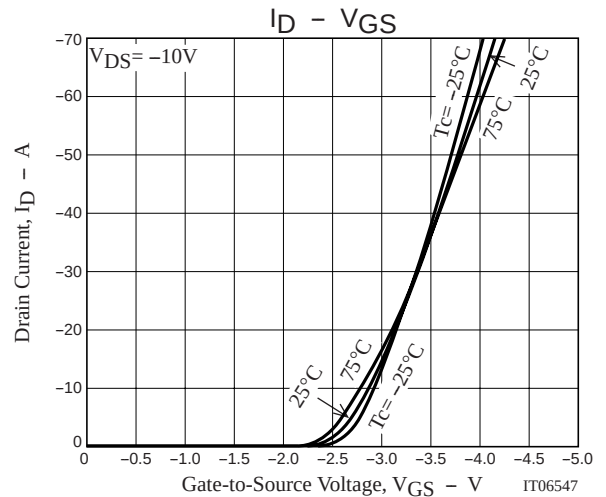
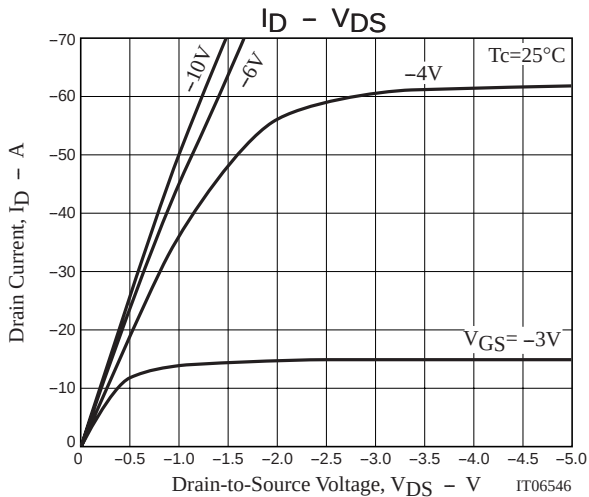
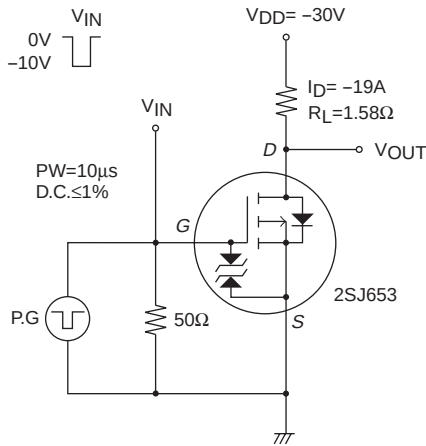
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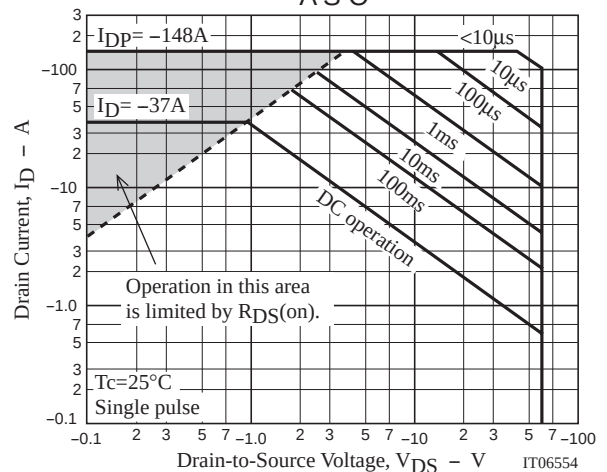
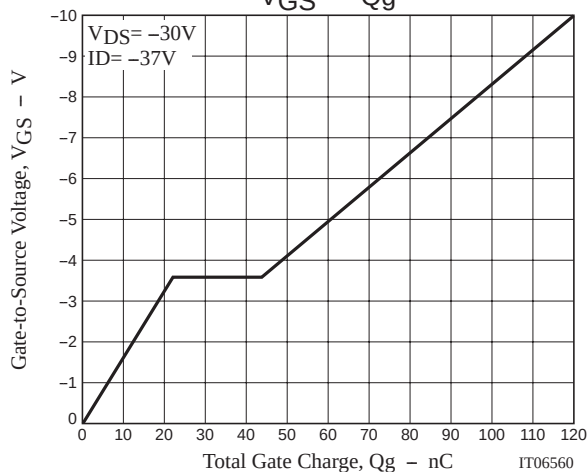
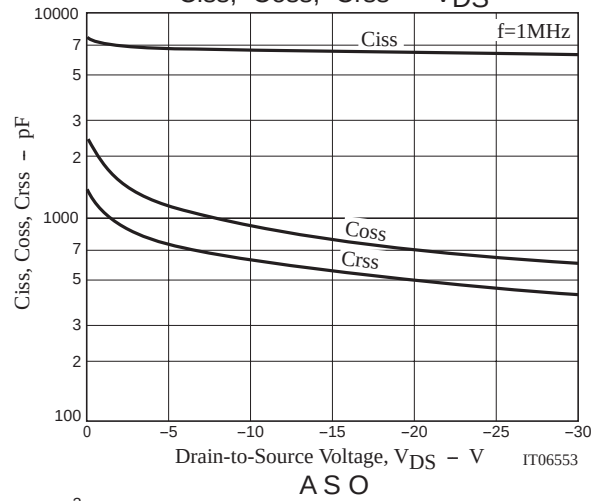
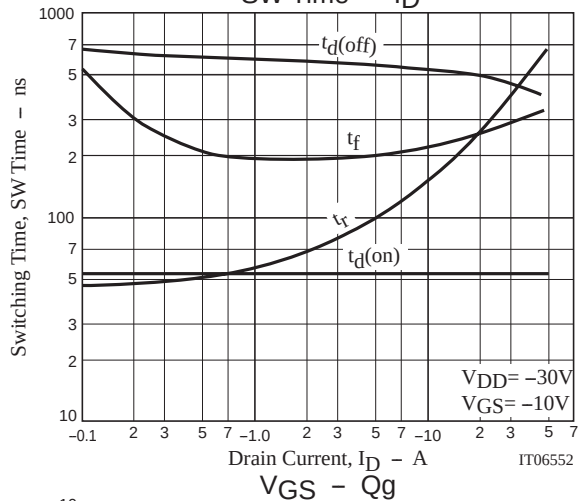
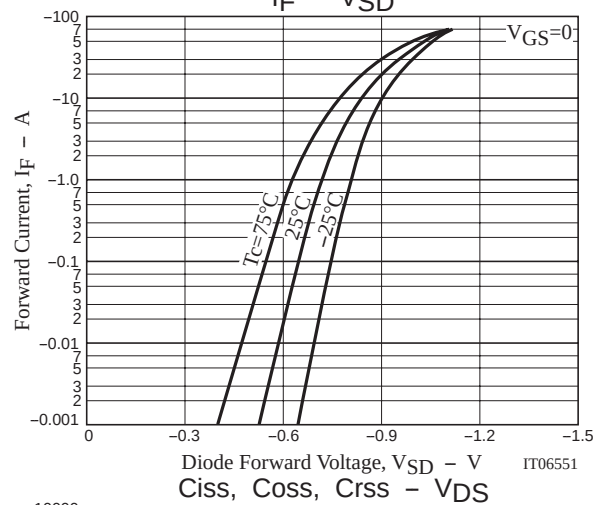
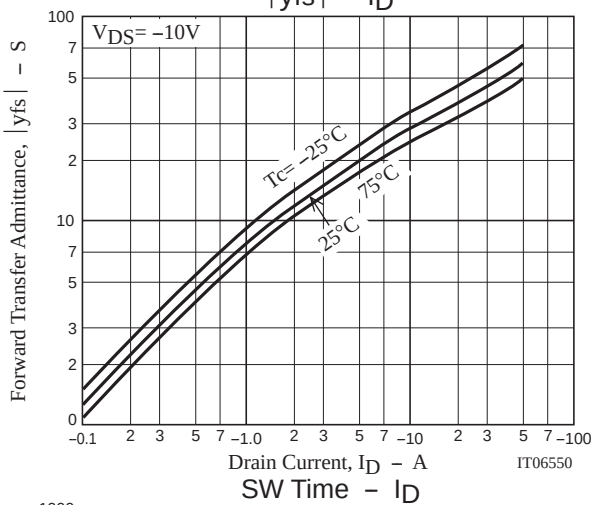
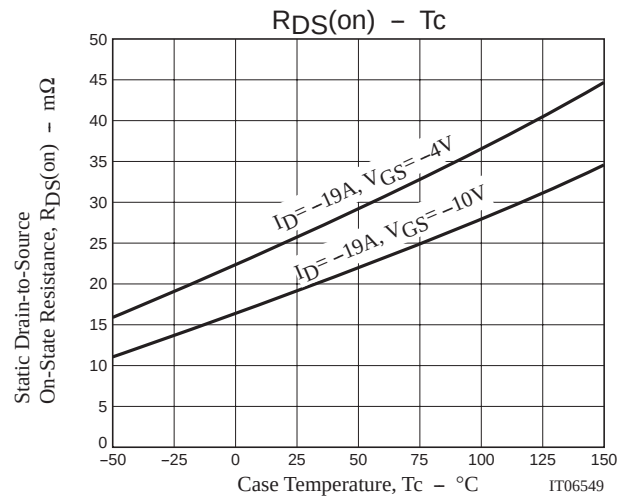
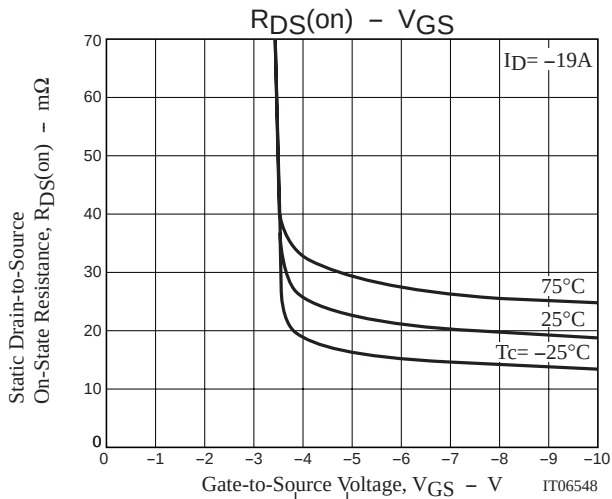
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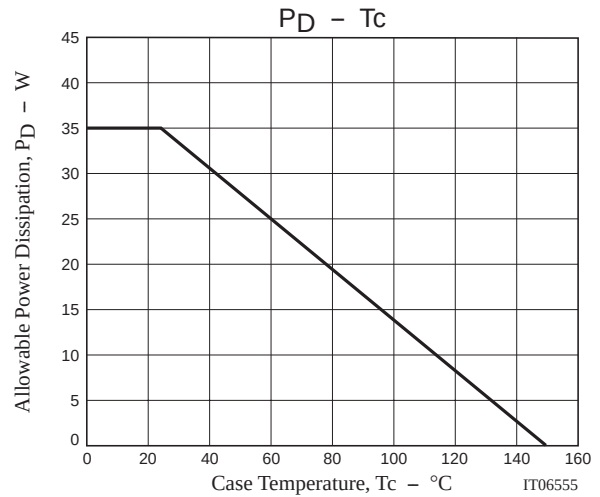
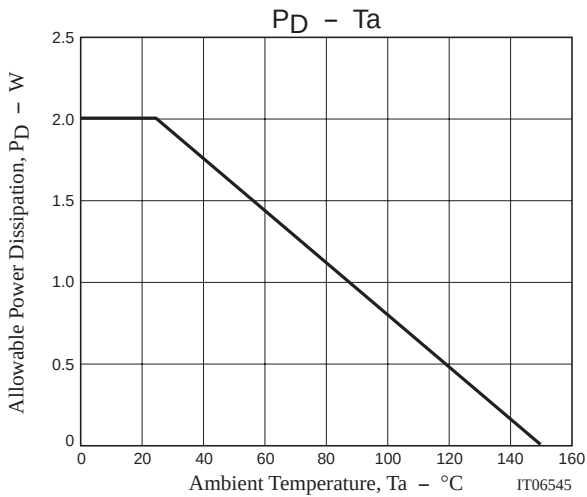
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -19A, V_{GS} = -10V$		19	25	$m\Omega$
	$R_{DS(on)2}$	$I_D = -19A, V_{GS} = -4V$		26	37	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS} = -20V, f = 1MHz$		6500		pF
Output Capacitance	C_{oss}	$V_{DS} = -20V, f = 1MHz$		700		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = -20V, f = 1MHz$		500		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		53		ns
Rise Time	t_r	See specified Test Circuit.		245		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		495		ns
Fall Time	t_f	See specified Test Circuit.		255		ns
Total Gate Charge	Q_g	$V_{DS} = -30V, V_{GS} = -10V, I_D = -37A$		120		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS} = -30V, V_{GS} = -10V, I_D = -37A$		22		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS} = -30V, V_{GS} = -10V, I_D = -37A$		22		nC
Diode Forward Voltage	V_{SD}	$I_S = -37A, V_{GS} = 0$		-0.99	-1.2	V

Switching Time Test Circuit



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