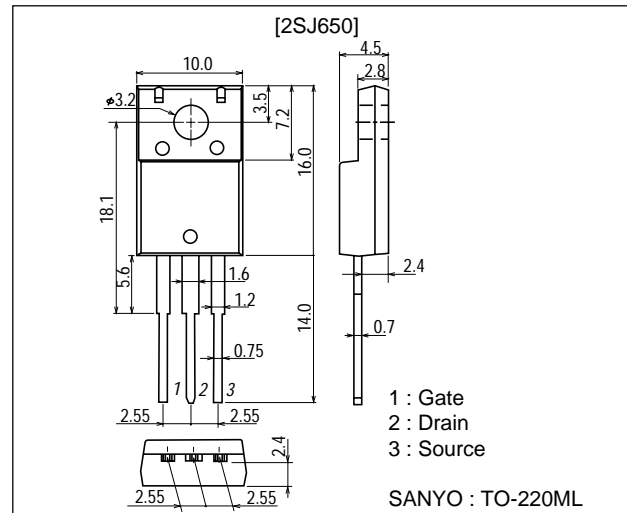


**2SJ650****DC / DC Converter Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

**Package Dimensions**unit : mm  
2063A**Specifications****Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-60	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-12	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-48	A
Allowable Power Dissipation	P <sub>D</sub>		2.0	W
		T <sub>c</sub> =25°C	20	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0	-60			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-60V, V <sub>GS</sub> =0			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-6A	7	10		S

Marking : J650

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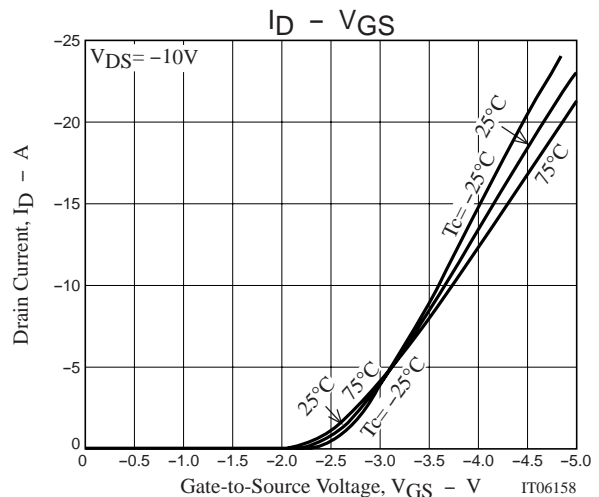
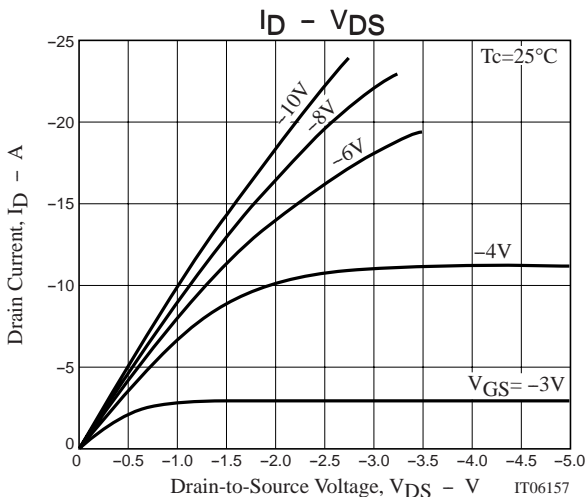
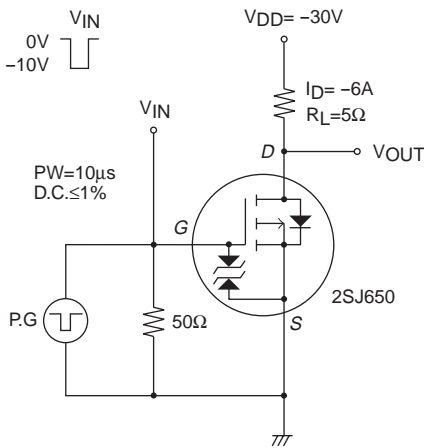
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# 2SJ650

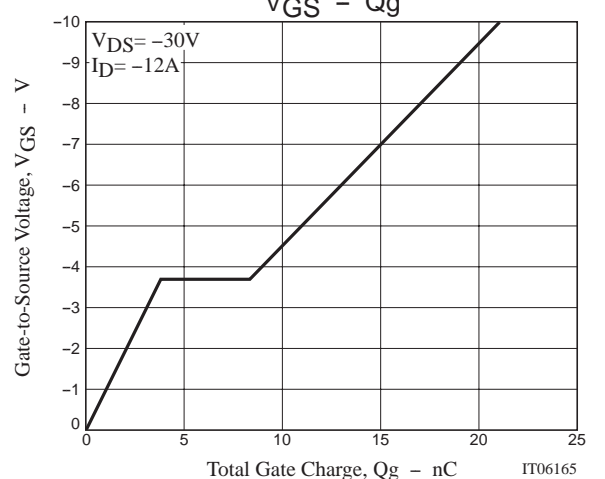
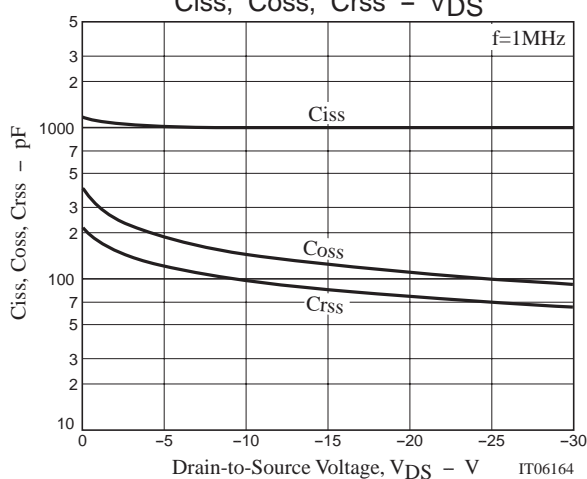
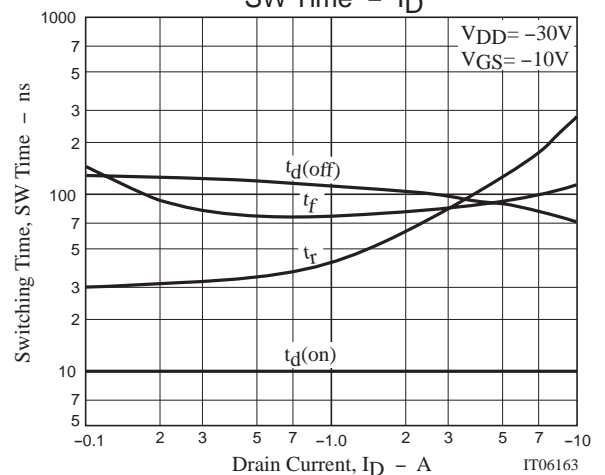
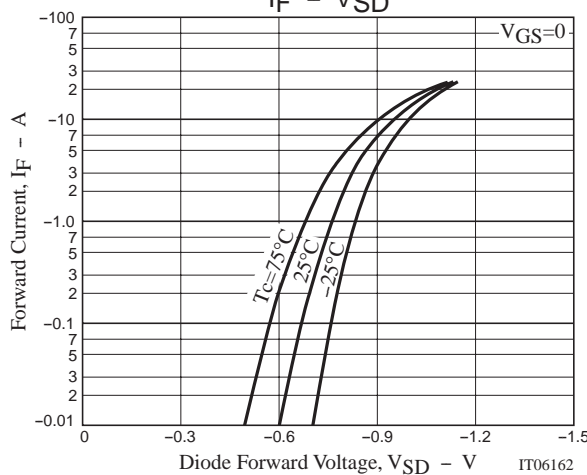
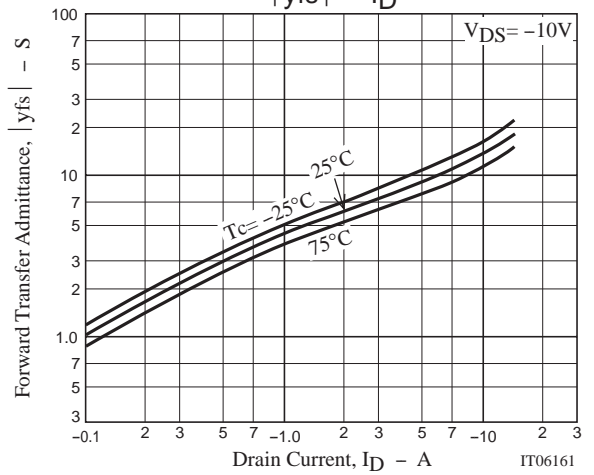
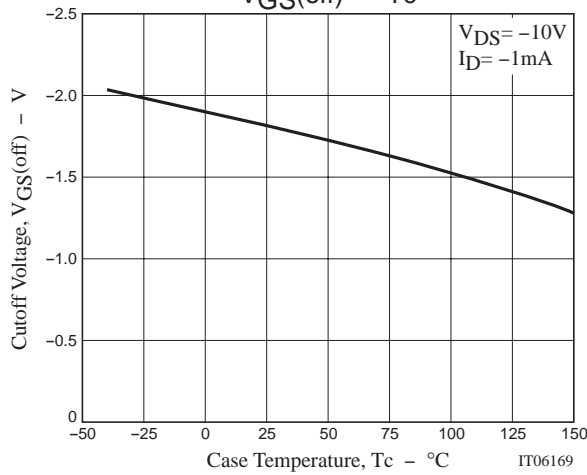
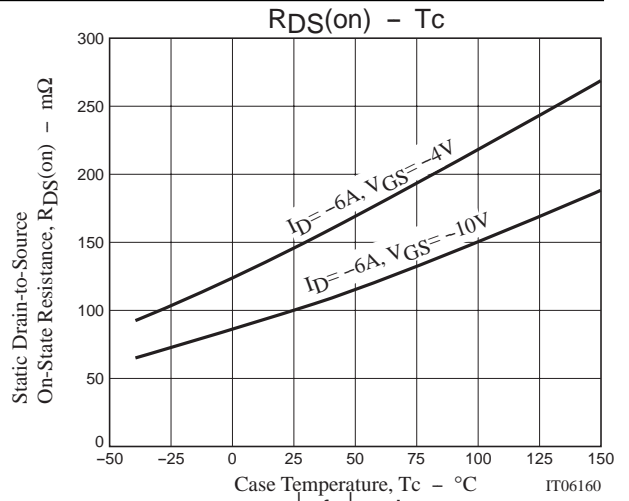
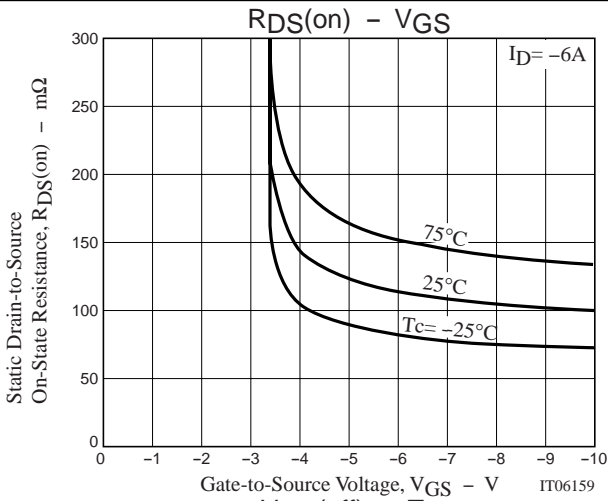
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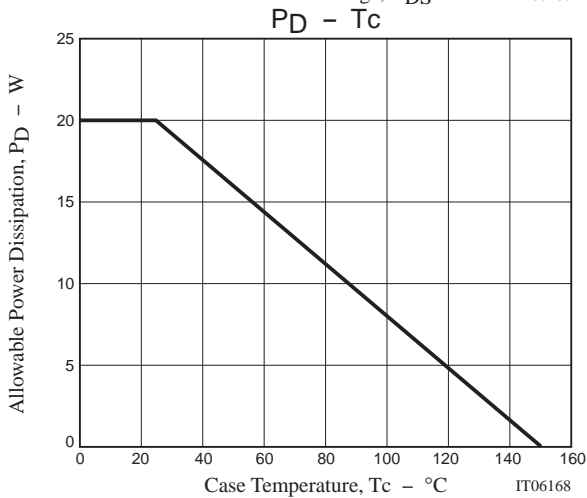
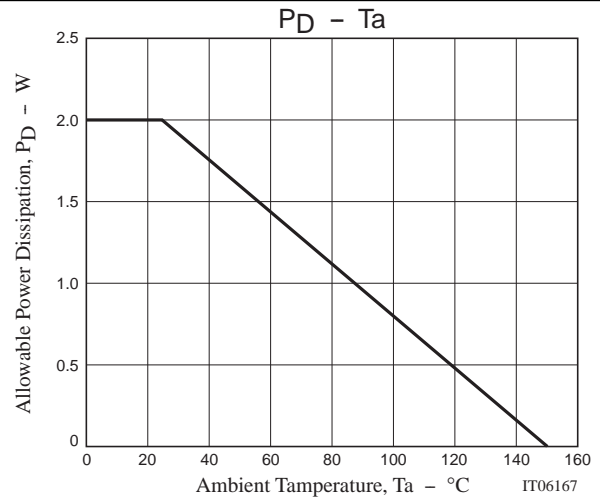
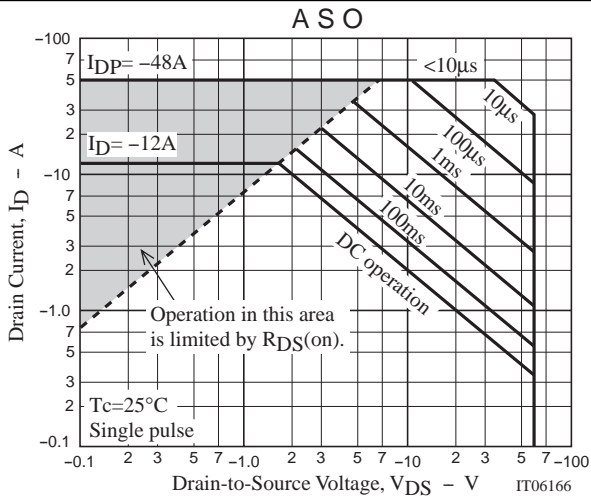
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -6A, V_{GS} = -10V$		100	135	$m\Omega$
	$R_{DS(on)2}$	$I_D = -6A, V_{GS} = -4V$		145	205	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -20V, f = 1MHz$		1020		$pF$
Output Capacitance	$C_{oss}$	$V_{DS} = -20V, f = 1MHz$		110		$pF$
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -20V, f = 1MHz$		76		$pF$
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		10		ns
Rise Time	$t_r$	See specified Test Circuit.		145		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		85		ns
Fall Time	$t_f$	See specified Test Circuit.		96		ns
Total Gate Charge	$Q_g$	$V_{DS} = -30V, V_{GS} = -10V, I_D = -12A$		21		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -30V, V_{GS} = -10V, I_D = -12A$		3.8		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -30V, V_{GS} = -10V, I_D = -12A$		4.5		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -12A, V_{GS} = 0$		-0.9	-1.2	V

## Switching Time Test Circuit



# 2SJ650





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