



SANYO Semiconductors

## DATA SHEET

# 2SJ655 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

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

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-100	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		-12	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	-48	A
Allowable Power Dissipation	$P_D$		2.0	W
		$T_c=25^\circ\text{C}$	25	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) *1	$E_{AS}$		144	mJ
Avalanche Current *2	$I_{AV}$		-12	A

Note : \*1  $V_{DD}=-50\text{V}$ ,  $L=1\text{mH}$ ,  $I_{AV}=-12\text{A}$

\*2  $L \leq 1\text{mH}$ , Single pulse

Marking : J655

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# 2SJ655

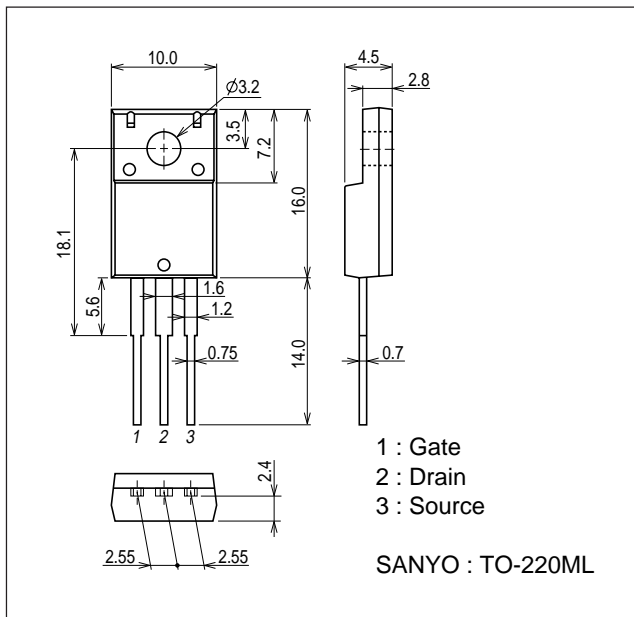
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-100			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -100V, V_{GS} = 0V$			-1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-1.2		-2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -6A$	9	13		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -6A, V_{GS} = -10V$		100	136	$m\Omega$
	$R_{DS(on)2}$	$I_D = -6A, V_{GS} = -4V$		136	190	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -20V, f = 1MHz$		2090		pF
Output Capacitance	$C_{oss}$	$V_{DS} = -20V, f = 1MHz$		155		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -20V, f = 1MHz$		108		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		17		ns
Rise Time	$t_r$	See specified Test Circuit.		95		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		187		ns
Fall Time	$t_f$	See specified Test Circuit.		95		ns
Total Gate Charge	$Q_g$	$V_{DS} = -50V, V_{GS} = -10V, I_D = -12A$		41		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS} = -50V, V_{GS} = -10V, I_D = -12A$		7		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS} = -50V, V_{GS} = -10V, I_D = -12A$		9		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -12A, V_{GS} = 0V$		-0.88	-1.2	V

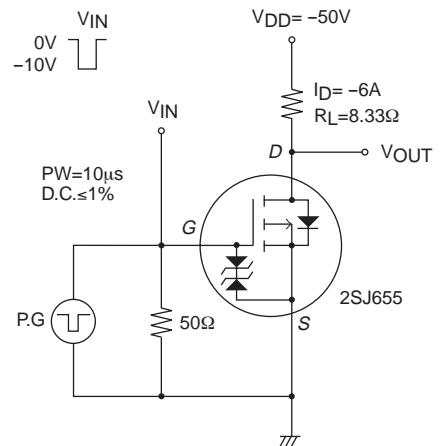
## Package Dimensions

unit : mm (typ)

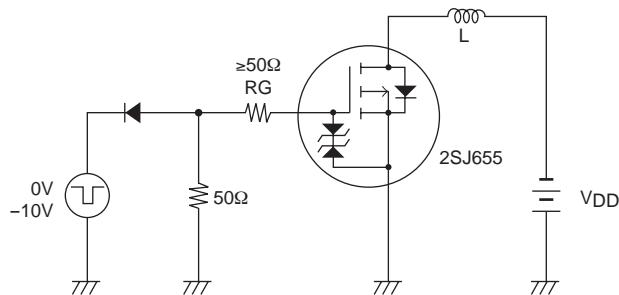
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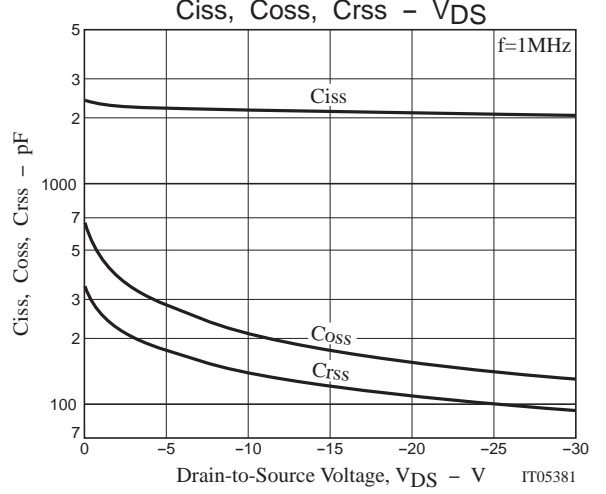
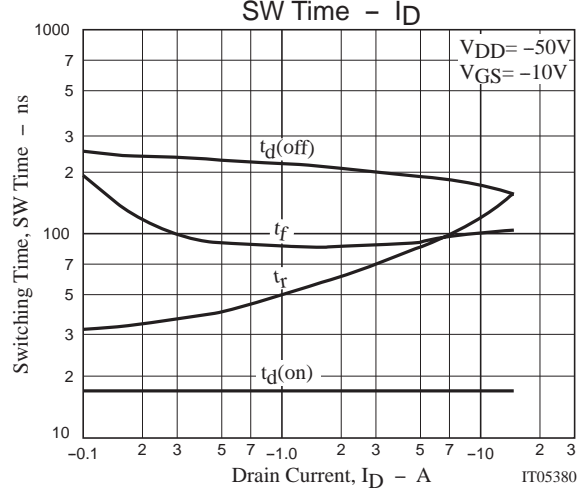
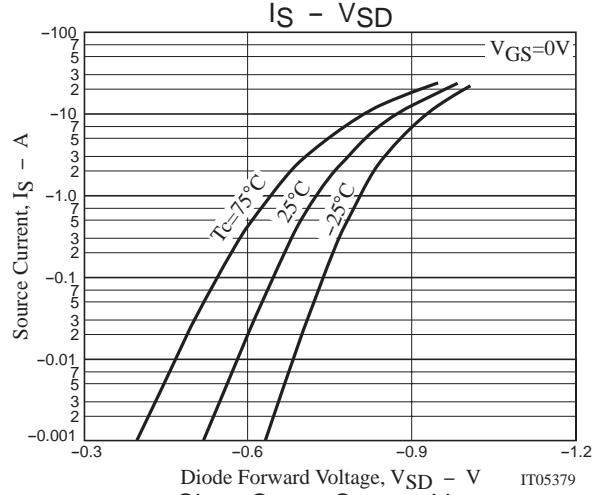
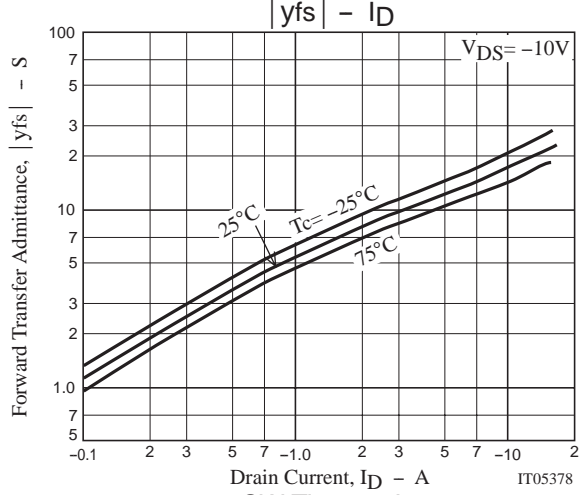
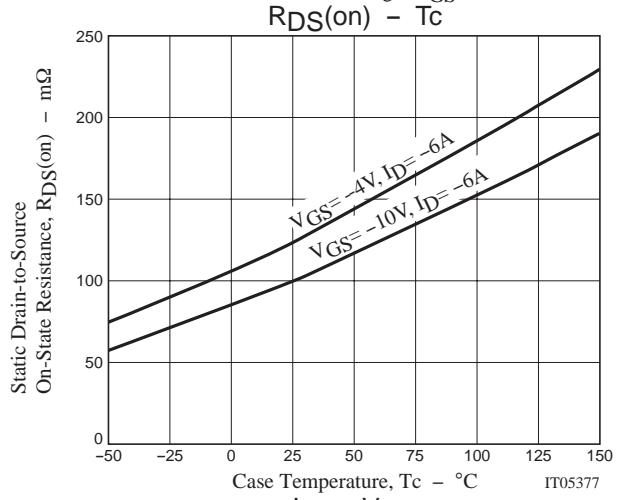
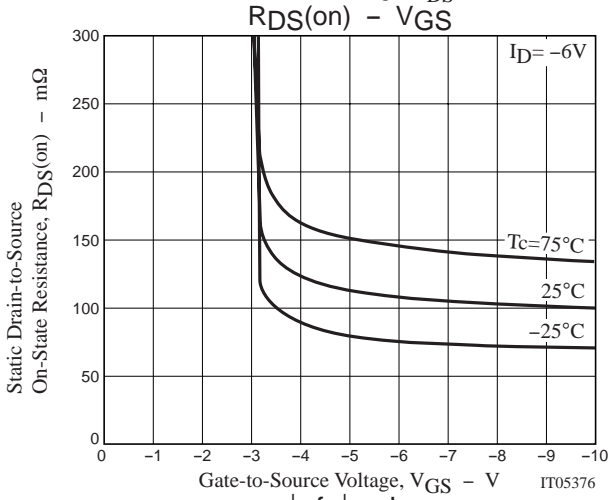
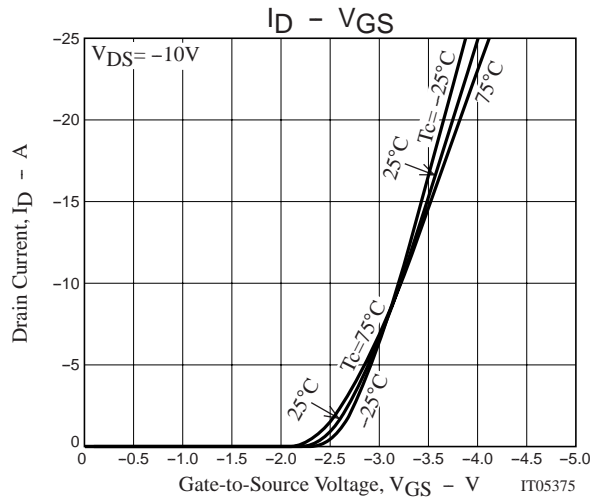
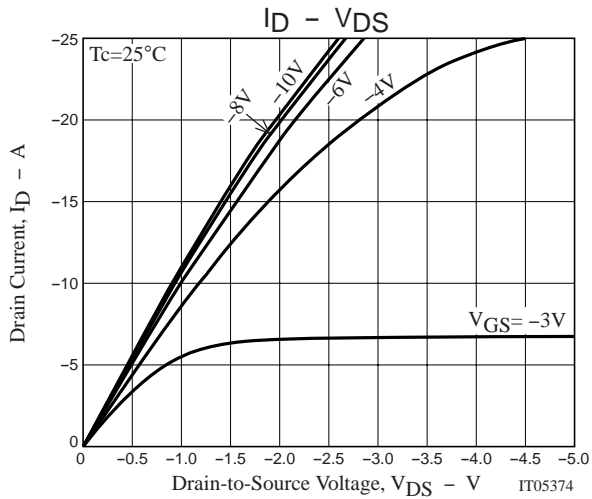


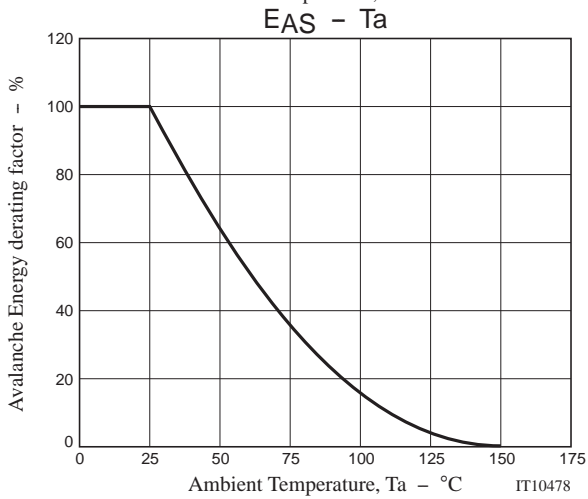
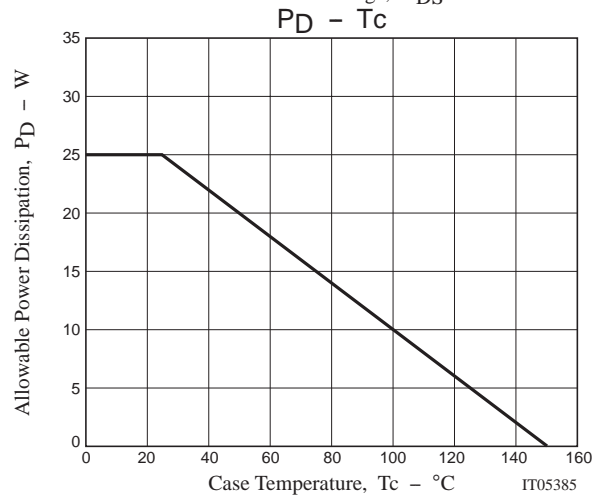
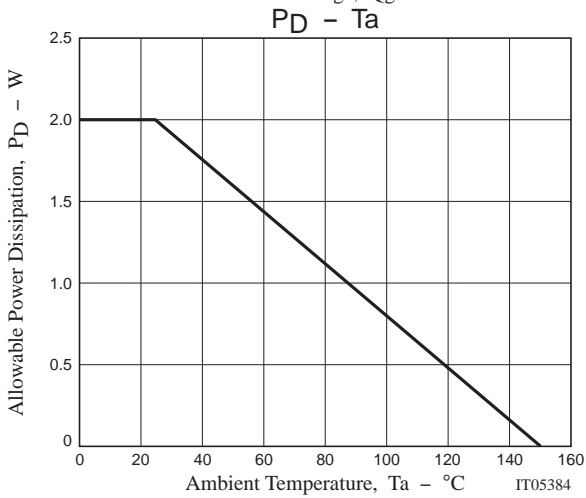
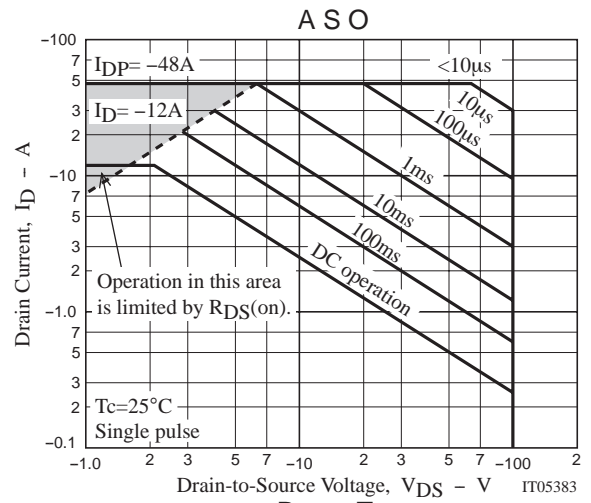
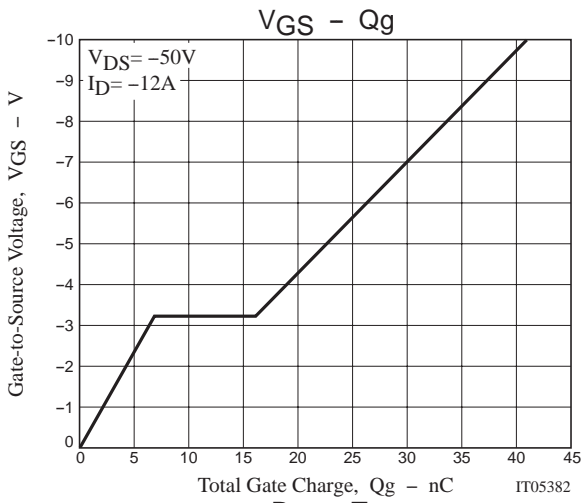
## Switching Time Test Circuit



## Avalanche Resistance Test Circuit







Note on usage : Since the 2SJ655 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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