Ordering number:EN4744

P-Channel Silicon MOSFET

2SJ255

Ultrahigh-Speed Switching Applications

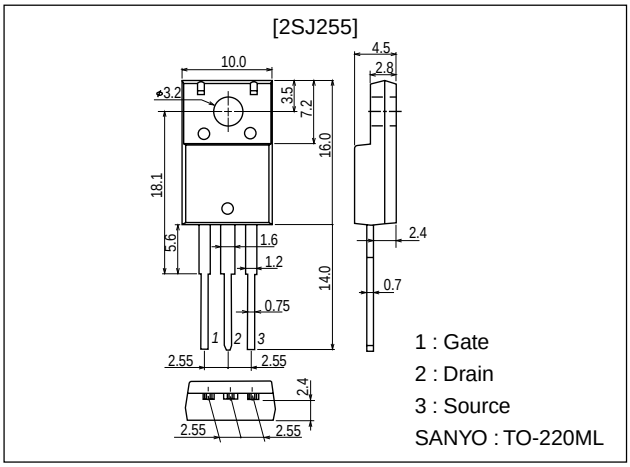
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Micaless package facilitating easy mounting.

Package Dimensions

unit:mm

2063A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		–30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		–10	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–40	A
Allowable Power Dissipation	P_D		2.0	W
		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	–30			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–30V, V_{GS}=0			–100	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=–10V, I_D=–1mA	–1.0		–2.0	V
Forward Transfer Admittance	| yfs |	V_{DS}=–10V, I_D=–6A	5	8		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=–6A, V_{GS}=–10V		0.07	0.095	Ω
	$R_{DS(on)}$	I_D=–6A, V_{GS}=–4V		0.095	0.13	Ω

Continued on next page.

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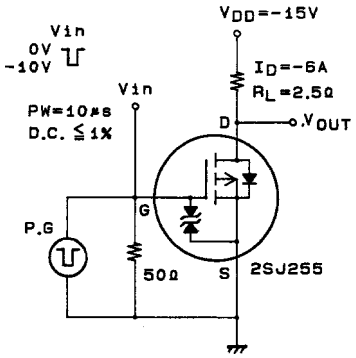
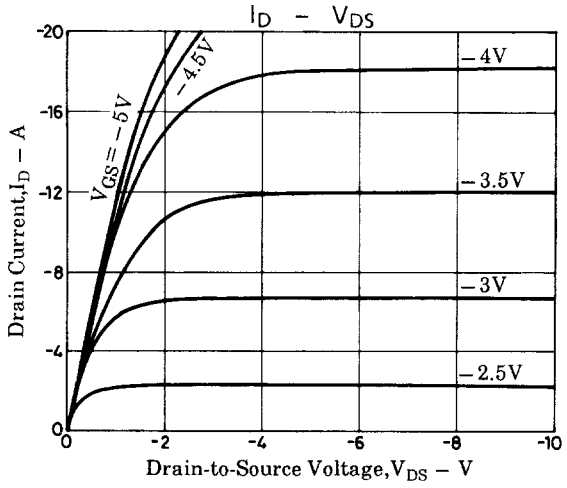
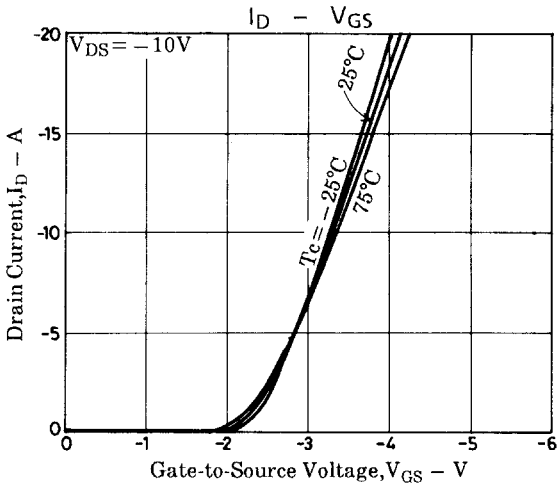
Continued from preceding page.

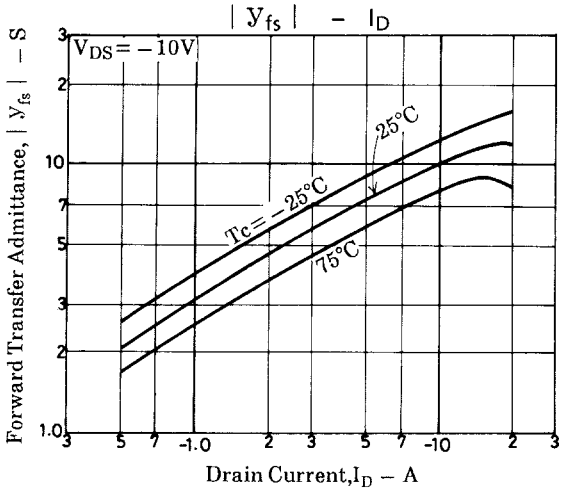
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=–10V, f=1MHz		1300		pF
Output Capacitance	Coss	V_{DS}=–10V, f=1MHz		780		pF
Reverse Transfer Capacitance	Crss	V_{DS}=–10V, f=1MHz		290		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		16		ns
Rise Time	t_r	See specified Test Circuit		60		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		300		ns
Fall Time	t_f	See specified Test Circuit		250		ns
Diode Forward Voltage	V_{SD}	I_S=–10A, V_{GS}=0		–1.0	–1.5	V

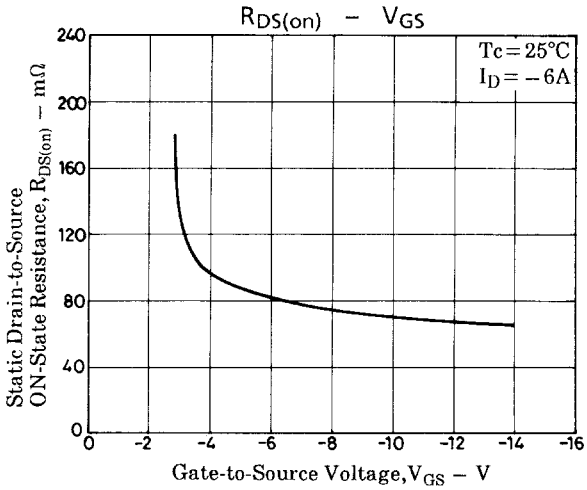
Switching Time Test Circuit

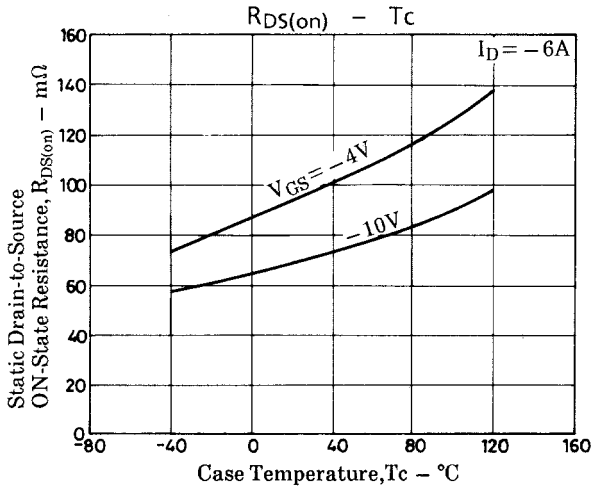


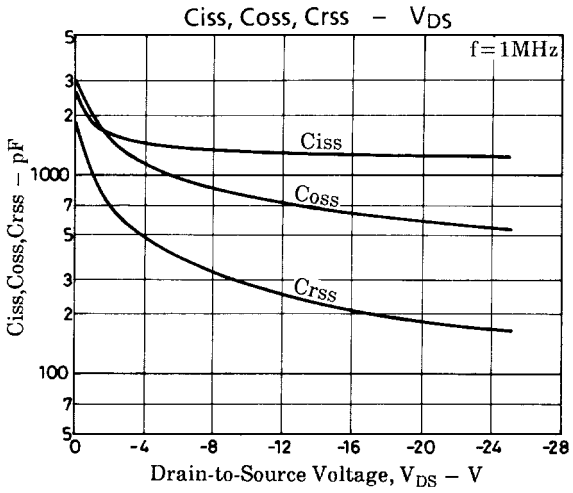


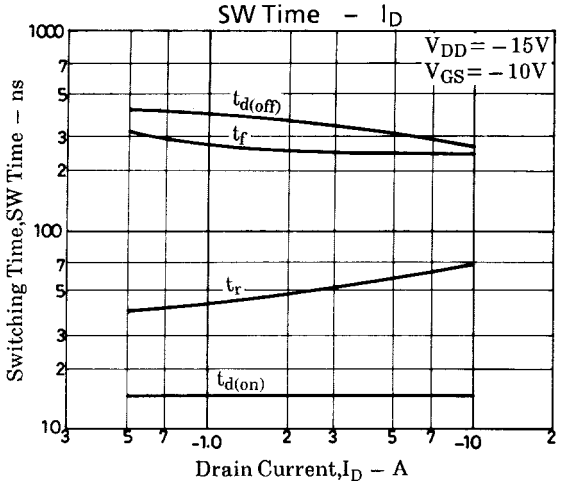


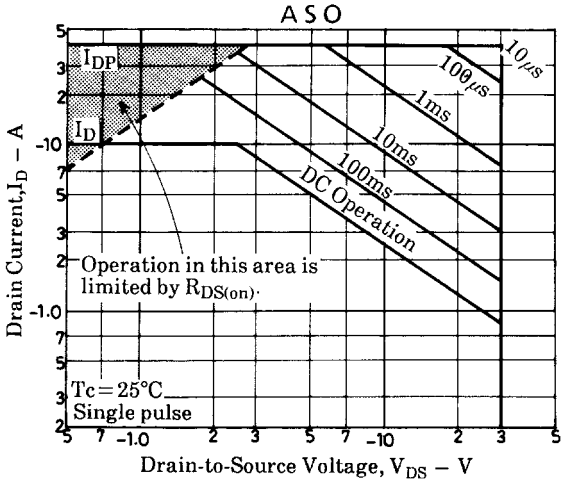


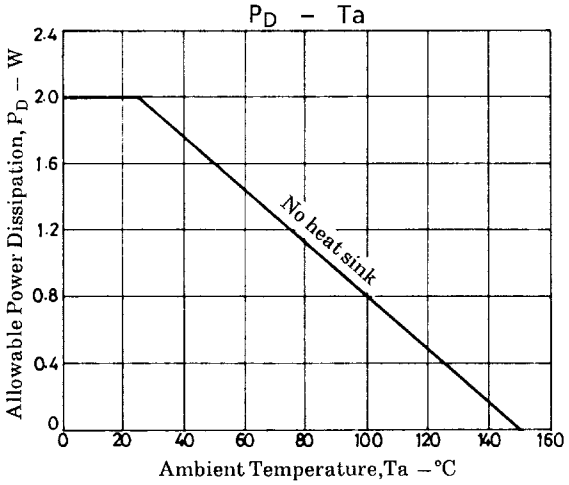


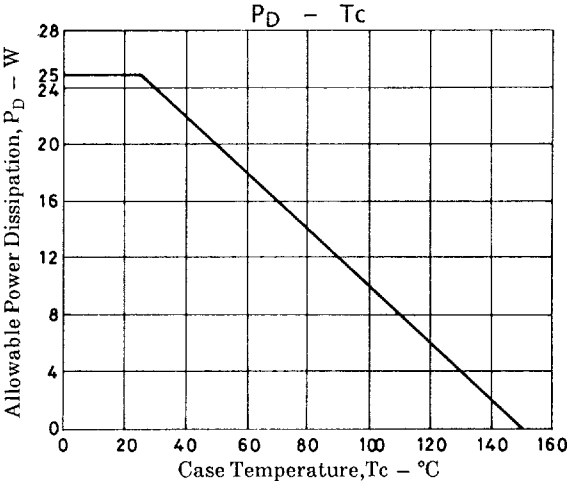

RDS(on) – Tc
ID = –6A
VGS = –4V
–10V
Static Drain-to-Source ON-State Resistance, RDS(on) – mΩ
Case Temperature, Tc – °C


Ciss, Coss, Crss – VDS
f = 1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V


SW Time – ID
VDD = –15V
VGS = –10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A


A S O
IDP
ID
10μs
100μs
1ms
10ms
100ms
DC Operation
Operation in this area is limited by RDS(on).
Tc = 25°C
Single pulse
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V


PD – Ta
No heat sink
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C


PD – Tc
Allowable Power Dissipation, PD – W
Case Temperature, Tc – °C