Ordering number : ENN6589

P-Channel Silicon MOSFET

2SJ499

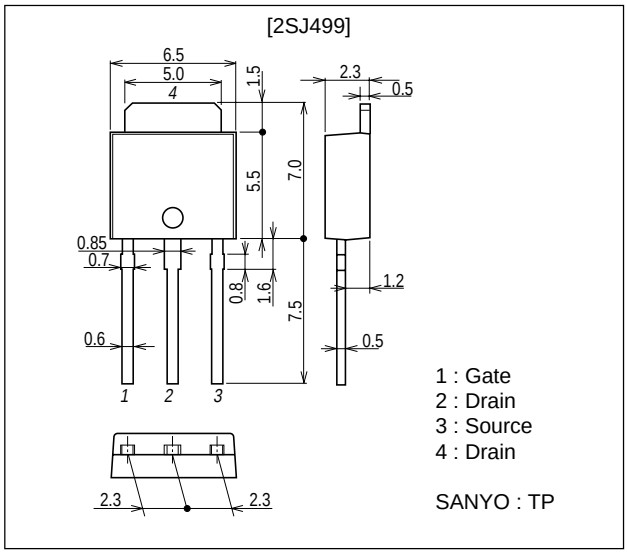
Load Switching Applications

Features

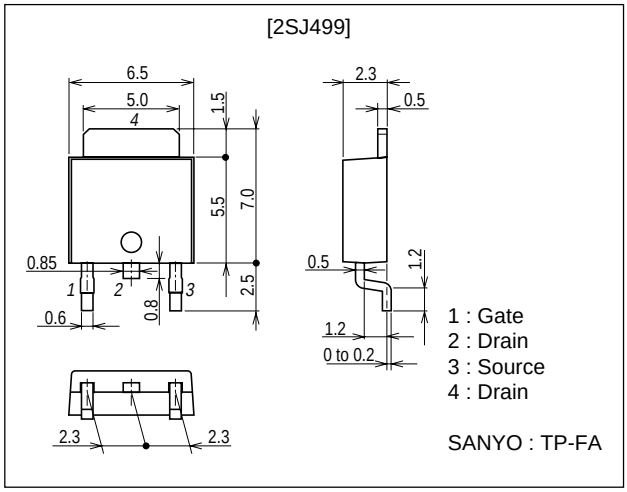
- Low ON-state resistance.
- 4V drive.

Package Dimensions

unit : mm
2083B



unit : mm
2092B



Specifications

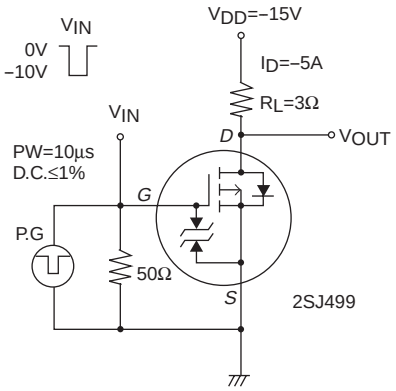
Absolute Maximum Ratings at Ta=25°C

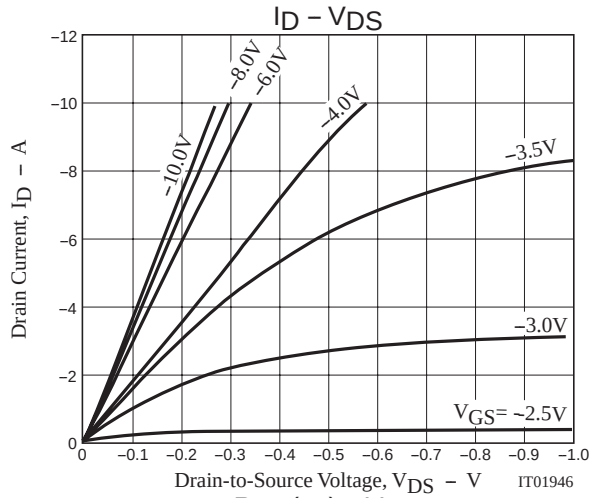
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−10	A
Drain Current (Pulse)	I_{DP}	PW≤10ms, duty cycle≤1%	−32	A
Allowable Power Dissipation	PD		1.0	W
		Tc=25°C	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

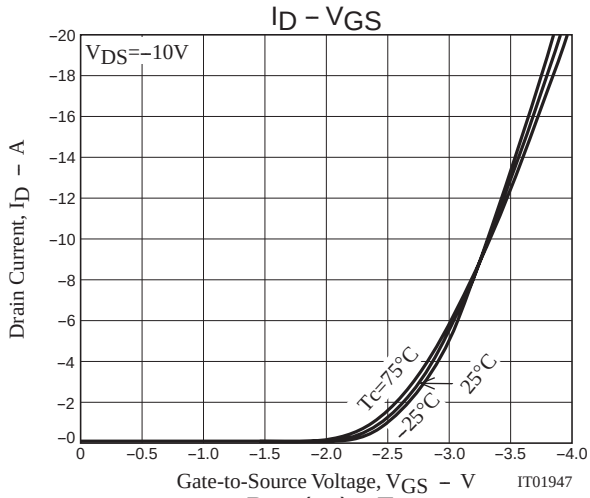
Electrical Characteristics at Ta=25°C

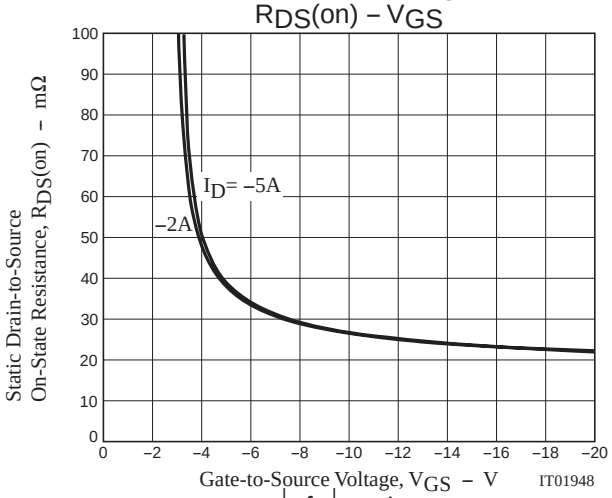
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.0		−2.5	V
Forward Transfer Admittance	|yfs|	V_{DS}=−10V, I_D=−5A	8	10		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−5A, V_{GS}=−10V		27	45	mΩ
	R_{DS}(on)2	I_D=−2A, V_{GS}=−4V		48	68	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		1500		pF
Output Capacitance	Coss	V_{DS}=−10V, f=1MHz		800		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−10V, f=1MHz		370		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit		15		ns
Rise Time	t_r	See specified Test Circuit		80		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit		150		ns
Fall Time	t_f	See specified Test Circuit		140		ns
Total Gate Charge	Qg	V_{DS}=−10V, V_{GS}=−10V, I_D=−10A		45		nC
Gate-to-Source Charge	Qgs	V_{DS}=−10V, V_{GS}=−10V, I_D=−10A		6		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=−10V, V_{GS}=−10V, I_D=−10A		11		nC
Diode Forward Voltage	V_{SD}	I_S=−5A, V_{GS}=0		−0.9	−1.2	V

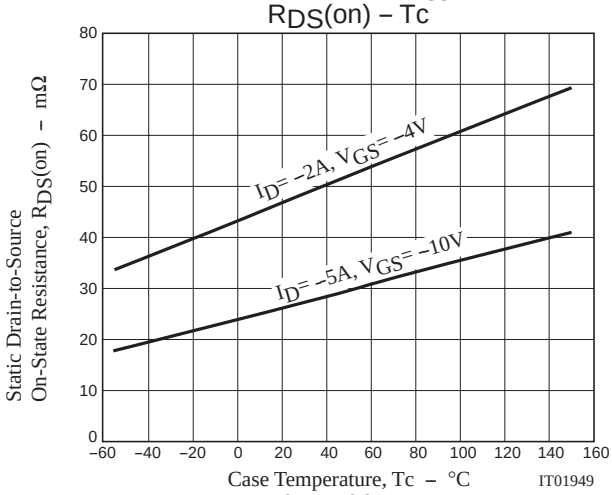
Switching Time Test Circuit

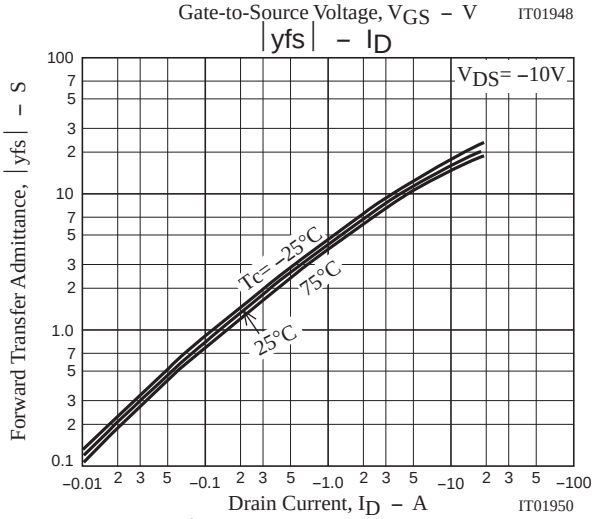


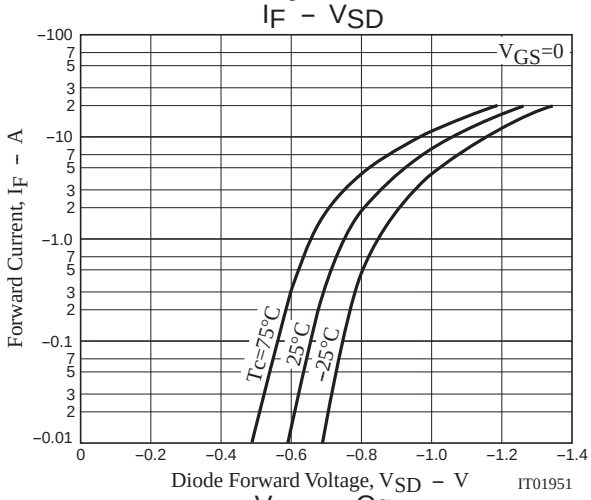

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT01946
–10.0V
–8.0V
–6.0V
–4.0V
–3.5V
–3.0V
VGS= –2.5V

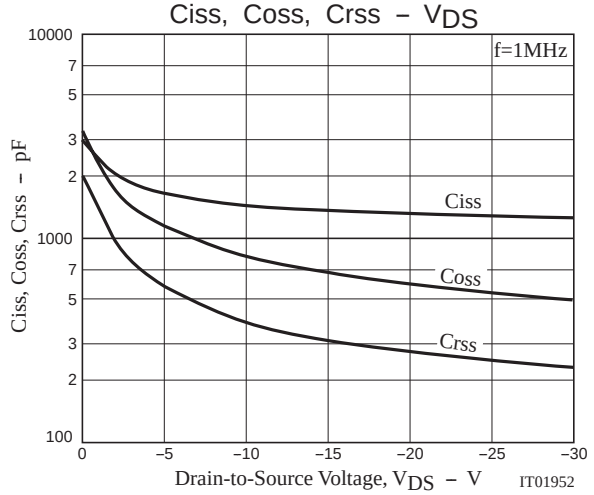

ID – VGS
VDS=–10V
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT01947
Tc=75°C
25°C
–25°C

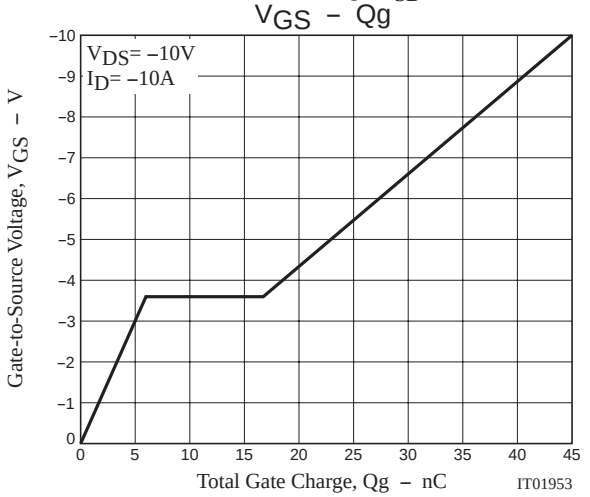

RDS(on) – VGS
Static Drain-to-Source
On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT01948
ID= –5A
–2A


RDS(on) – Tc
Static Drain-to-Source
On-State Resistance, RDS(on) – mΩ
Case Temperature, Tc – °C
IT01949
ID= –2A, VGS= –4V
ID= –5A, VGS= –10V


|yfs| – ID
VDS= –10V
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT01950
Tc= –25°C
75°C
25°C


IF – VSD
VGS=0
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT01951
Tc=75°C
25°C
–25°C


Ciss, Coss, Crss – VDS
f=1MHz
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT01952
Ciss
Coss
Crss


VGS – Qg
VDS= –10V
ID= –10A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT01953