Ordering number : ENN6970

N-Channel Silicon MOSFET

2SK3495

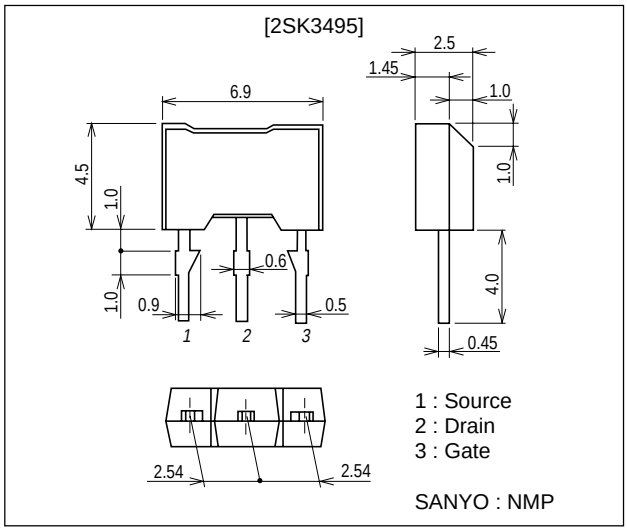
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- Meets radial taping.

Package Dimensions

unit : mm
2087A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		1.2	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	4.8	A
Allowable Power Dissipation	P_D		1	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	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0			10	μA
Gate-to-Sourse 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		2.4	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=0.6A	1.0	1.5		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=0.6A, V_{GS}=10V		380	500	mΩ
	R_{DS}(on)2	I_D=0.6A, V_{GS}=4V		500	680	mΩ

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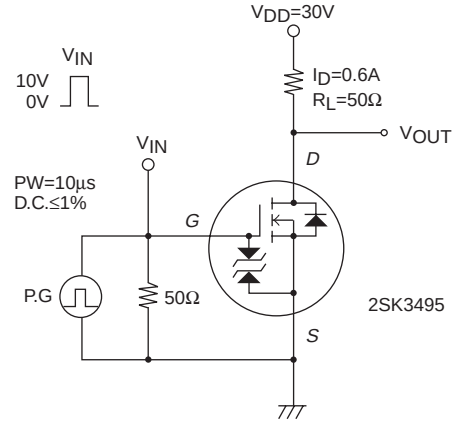
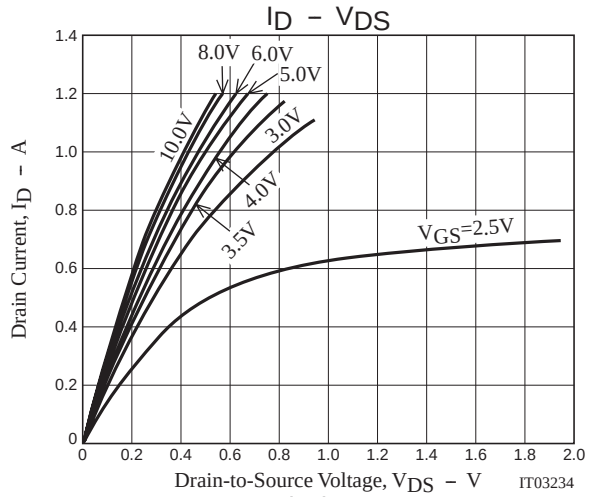
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

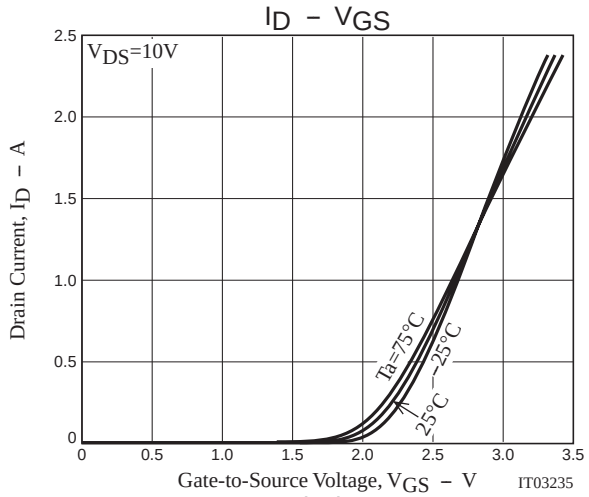
Continued from preceding page.

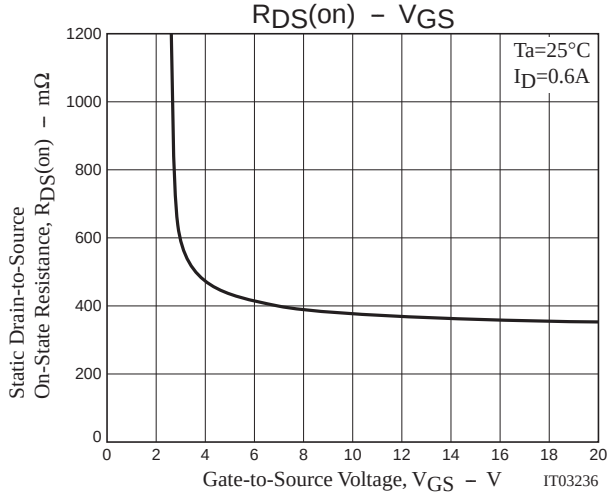
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		70		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		20		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		5		pF
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit		4		ns
Rise Time	t_{r}	See specified Test Circuit		3		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit		17		ns
Fall Time	t_{f}	See specified Test Circuit		4		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=10V, I_{D}=1.2A		3.6		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=10V, I_{D}=1.2A		0.6		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=10V, I_{D}=1.2A		0.5		nC
Diode Forward Voltage	V_{SD}	I_{S}=1.2A, V_{GS}=0		0.86	1.2	V

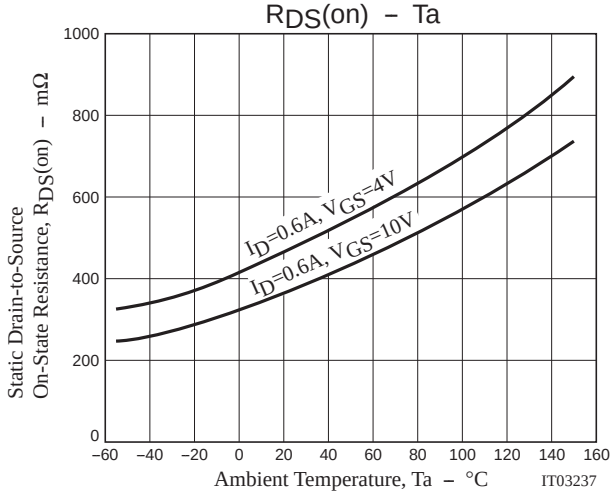
Switching Time Test Circuit

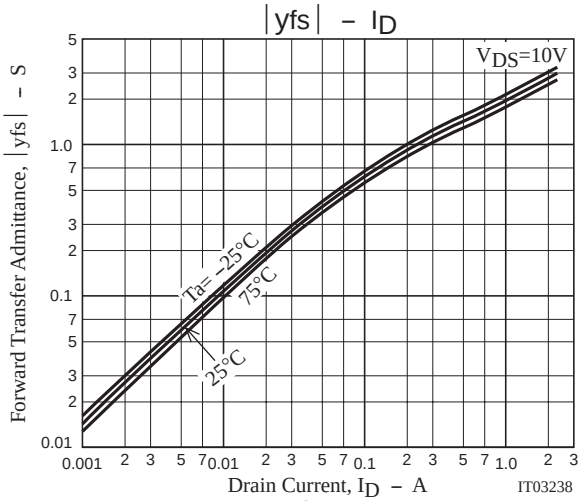


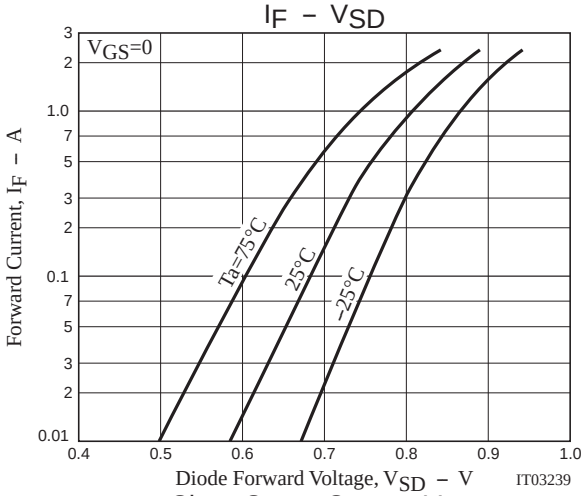


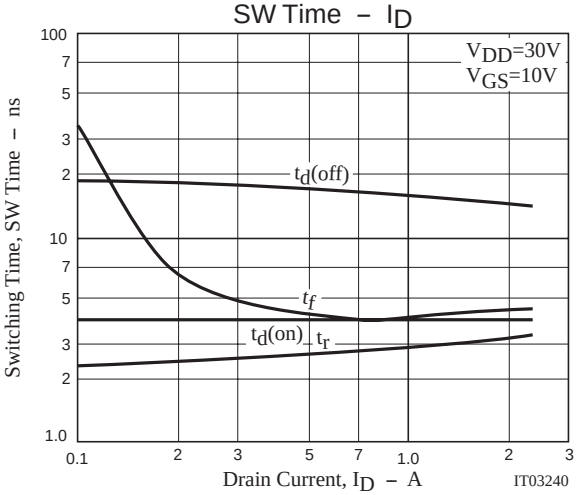


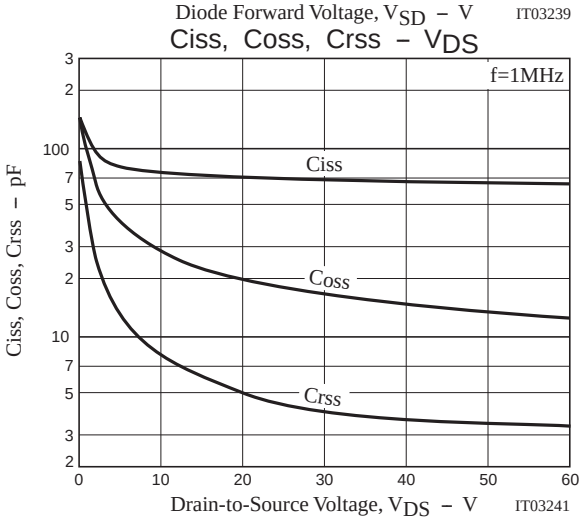


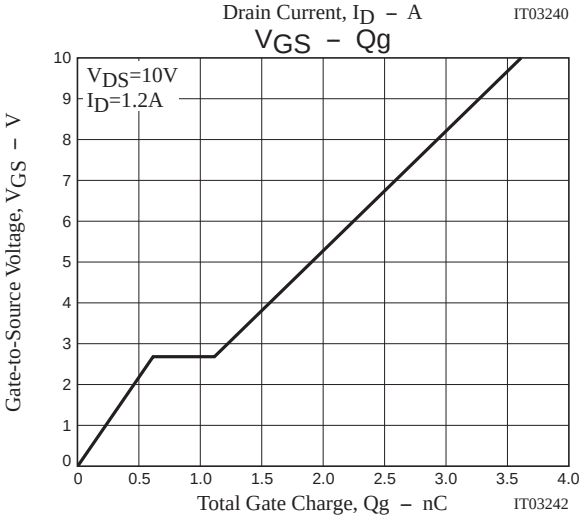


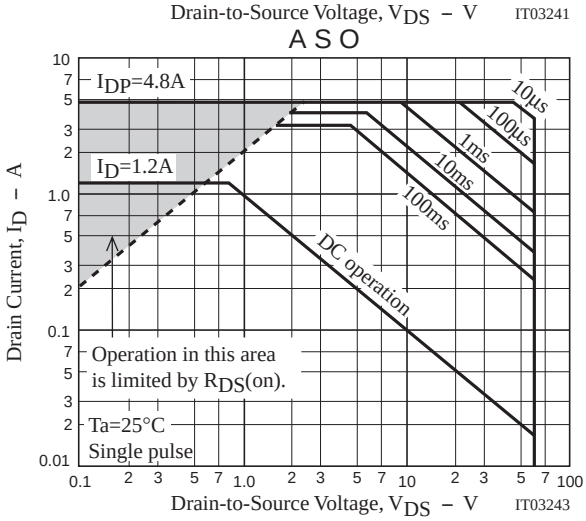

|yfs| – ID
VDS=10V
Ta= –25°C
75°C
25°C
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT03238

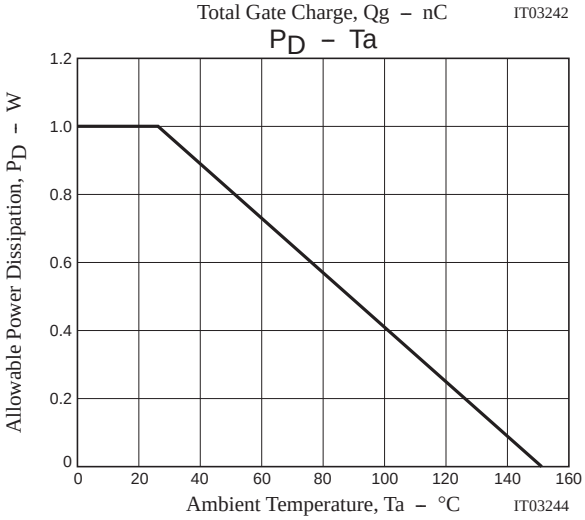

IF – VSD
VGS=0
Ta=75°C
25°C
–25°C
Forward Current, IF – A
Diode Forward Voltage, VSD – V
IT03239


SW Time – ID
VDD=30V
VGS=10V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT03240


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT03241


VGS – Qg
VDS=10V
ID=1.2A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT03242


A S O
IDP=4.8A
ID=1.2A
10μs
100μs
1ms
10ms
100ms
DC operation
Operation in this area
is limited by RDS(on).
Ta=25°C
Single pulse
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT03243


PD – Ta
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT03244