



SANYO Semiconductors

## DATA SHEET

N-Channel Silicon MOSFET

# 2SK2405 — General-Purpose Switching Device Applications

## Features

- Built-in FRD.
- 10V drive.

## Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		450	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±30	V
Drain Current (DC)	I <sub>D</sub>		10	A
Drain Current (Pulse)	I <sub>DP</sub>		40	A
Allowable Power Dissipation	P <sub>D</sub>	T <sub>c</sub> =25°C	1.65	W
			70	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> =0V	450			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =450V, V <sub>GS</sub> =0V			1.0	mA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30V, V <sub>DS</sub> =0V			±100	nA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	2.0		3.0	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =6A	3	6		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =6A, V <sub>GS</sub> =10V		0.55	0.75	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =20V, f=1MHz		1500		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =20V, f=1MHz		220		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =20V, f=1MHz		75		pF

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## 2SK2405

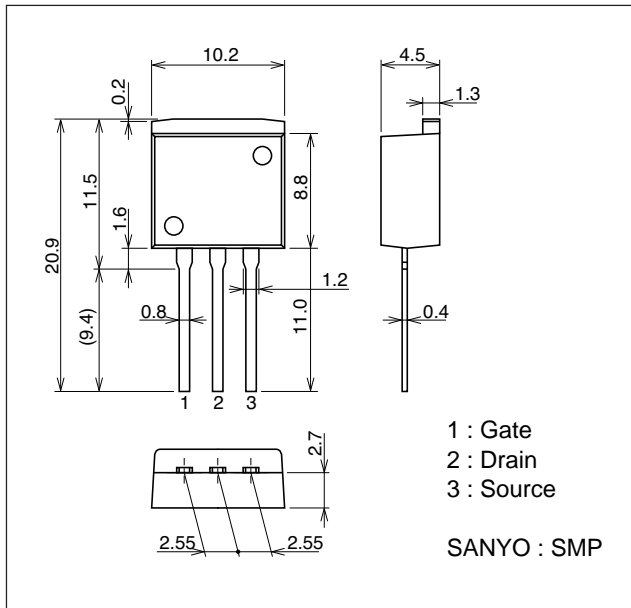
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		22		ns
Rise Time	$t_r$	See specified Test Circuit.		60		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		230		ns
Fall Time	$t_f$	See specified Test Circuit.		75		ns
Diode Forward Voltage	$V_{SD}$	$I_S=10A$ , $V_{GS}=0V$			1.5	V
Diode Reverse Recovery Time	$t_{rr}$	$I_S=10A$ , $di/dt=100A/\mu s$		150	195	ns

### Package Dimensions

unit : mm(typ)

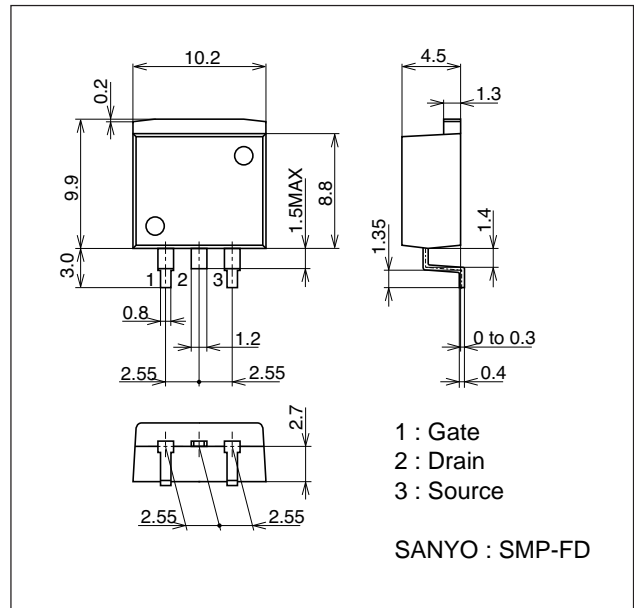
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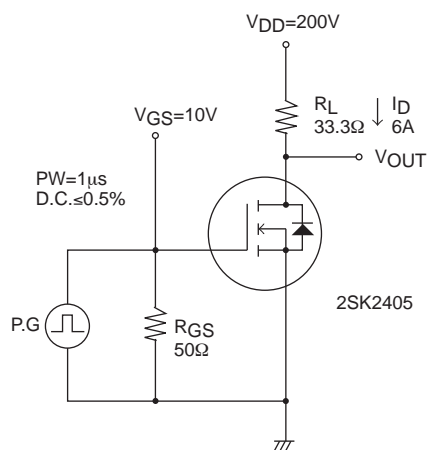
### Package Dimensions

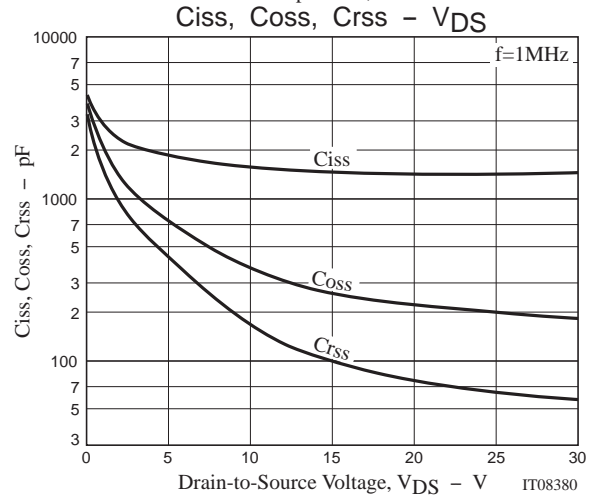
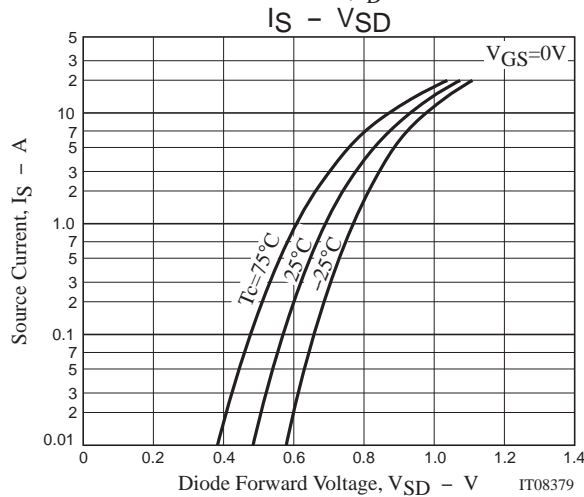
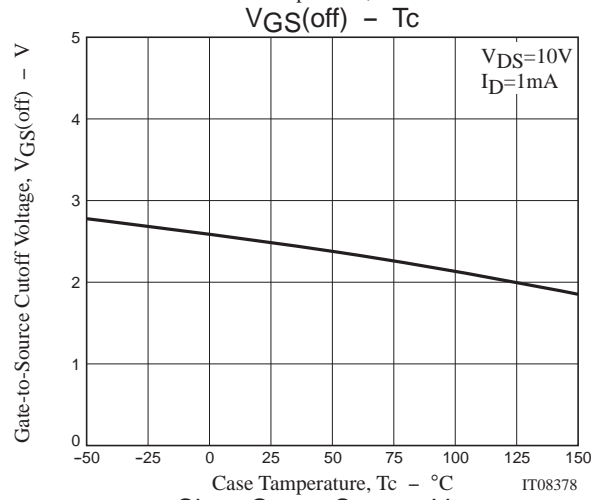
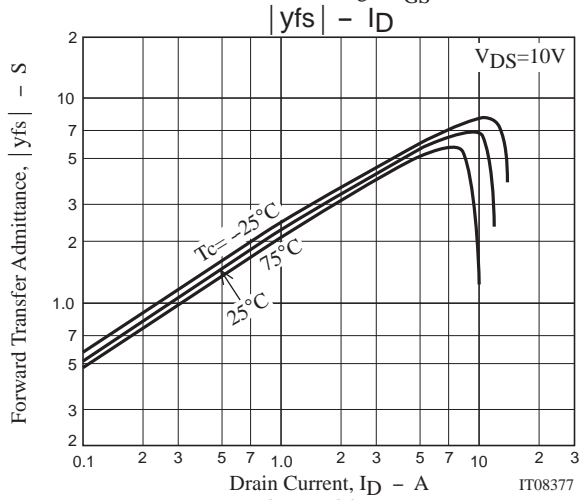
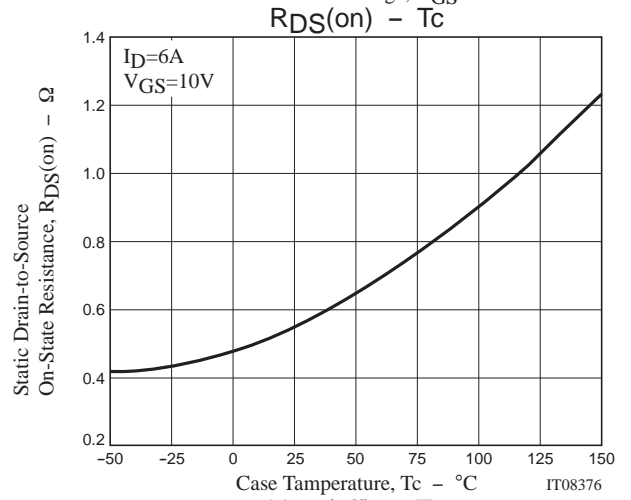
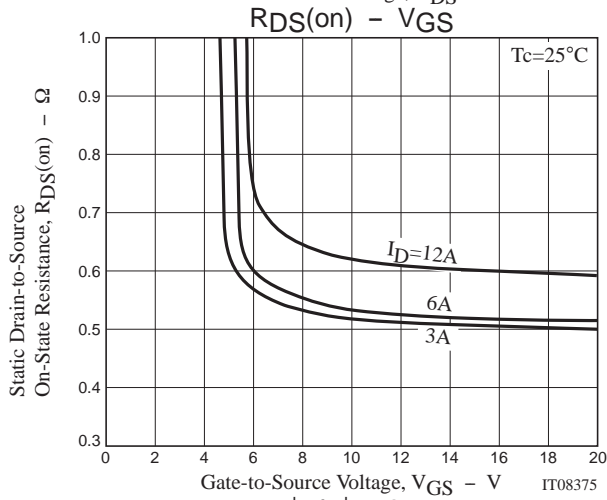
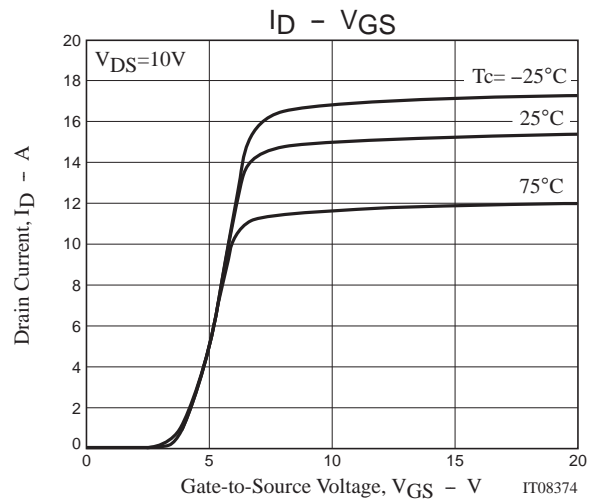
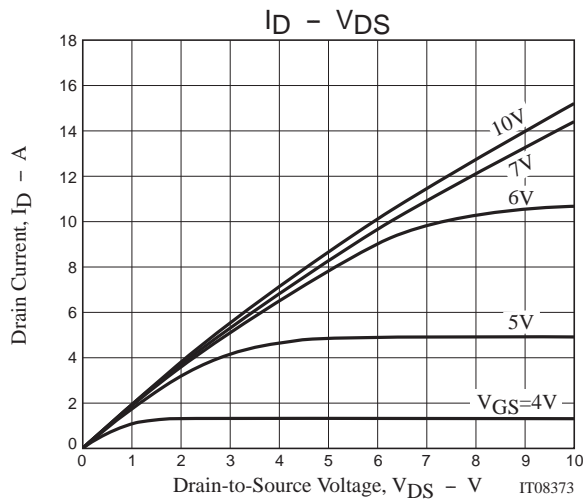
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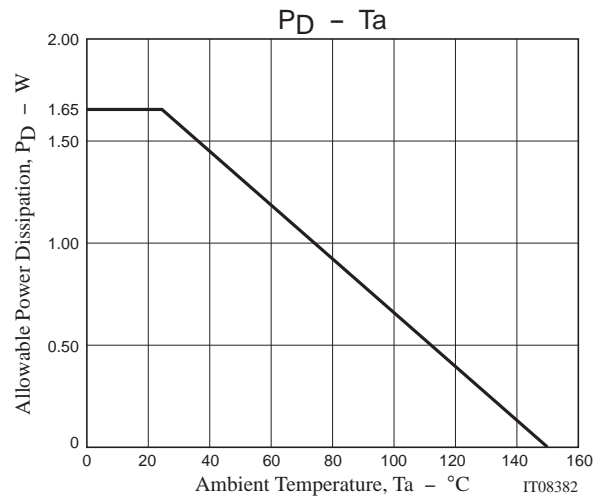
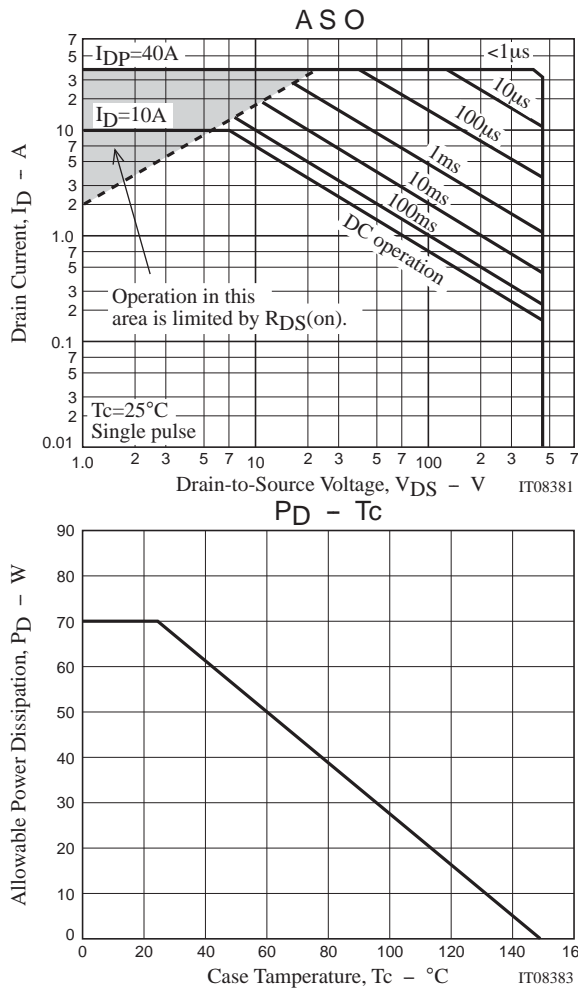
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### Switching Time Test Circuit







Note on usage : Since the 2SK2405 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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