



SANYO Semiconductors

**DATA SHEET**

# 2SK2405 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

**Features**

- Built-in FRD.
- 10V drive.

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		450	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		10	A
Drain Current (Pulse)	$I_{DP}$		40	A
Allowable Power Dissipation	$P_D$	$T_c=25^\circ\text{C}$	1.65	W
			70	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}, V_{GS}=0\text{V}$	450			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=450\text{V}, V_{GS}=0\text{V}$			1.0	mA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30\text{V}, V_{DS}=0\text{V}$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	2.0		3.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=6\text{A}$	3	6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=6\text{A}, V_{GS}=10\text{V}$		0.55	0.75	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		1500		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		220		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20\text{V}, f=1\text{MHz}$		75		pF

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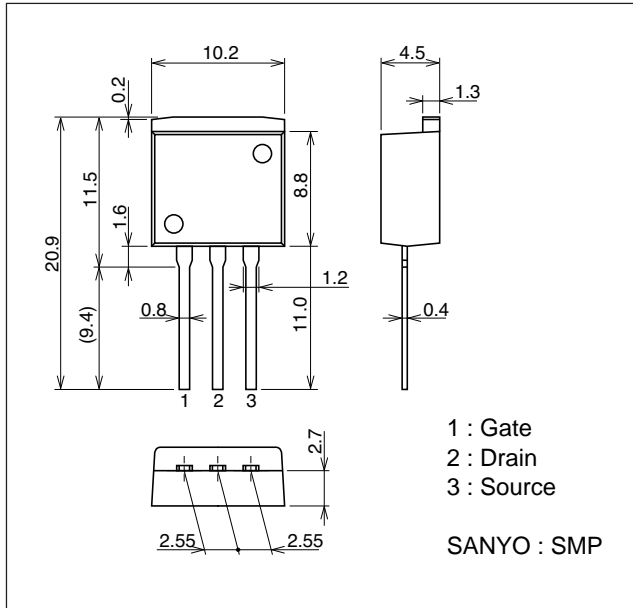
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		22		ns
Rise Time	$t_r$	See specified Test Circuit.		60		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		230		ns
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

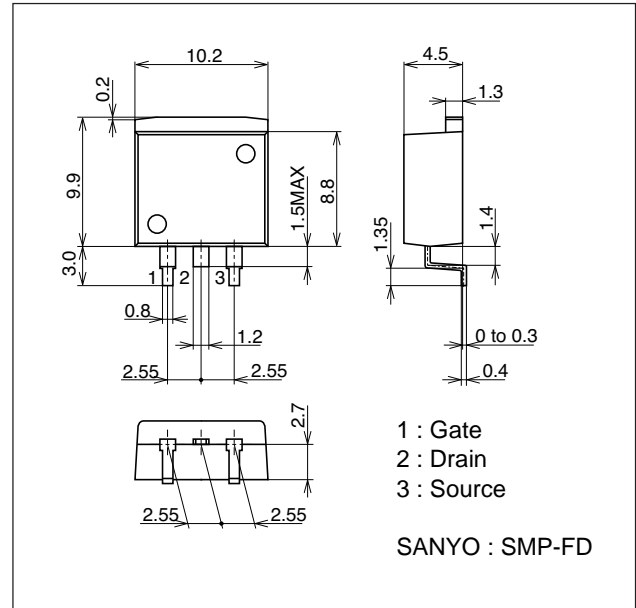
**Package Dimensions**

unit : mm(typ)  
7513-002

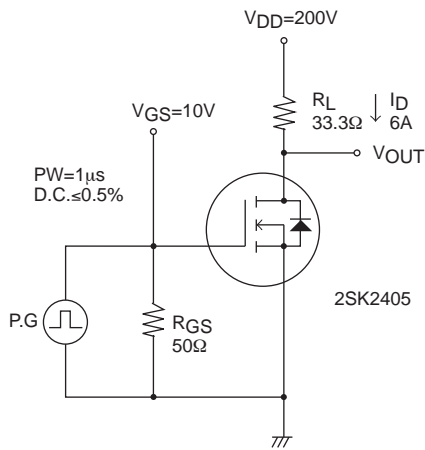


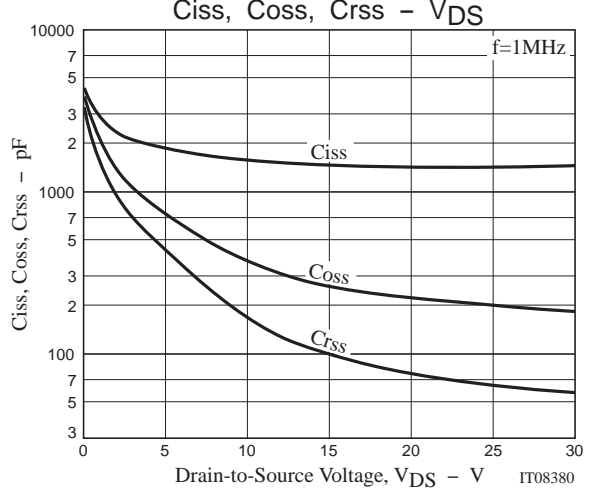
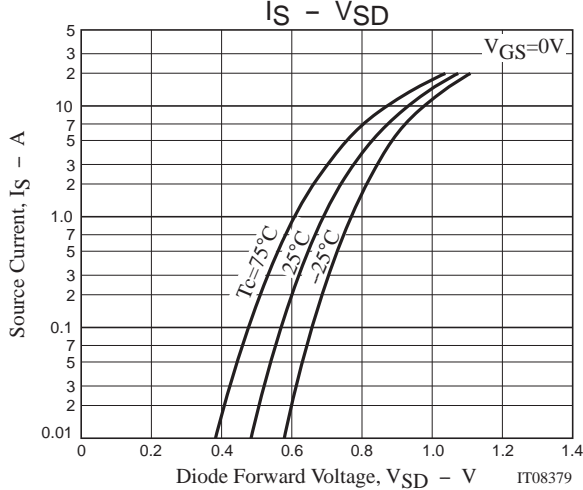
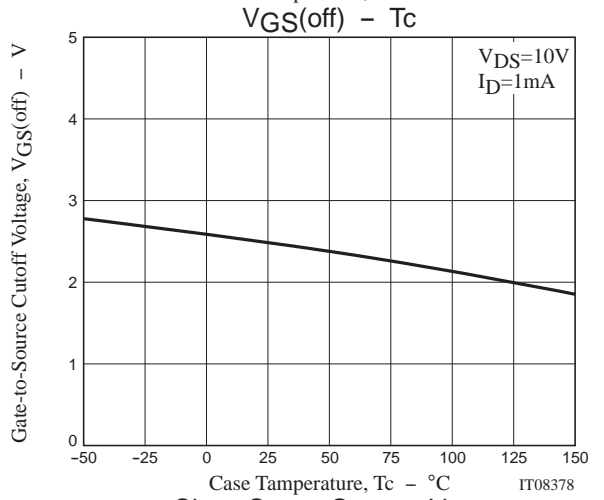
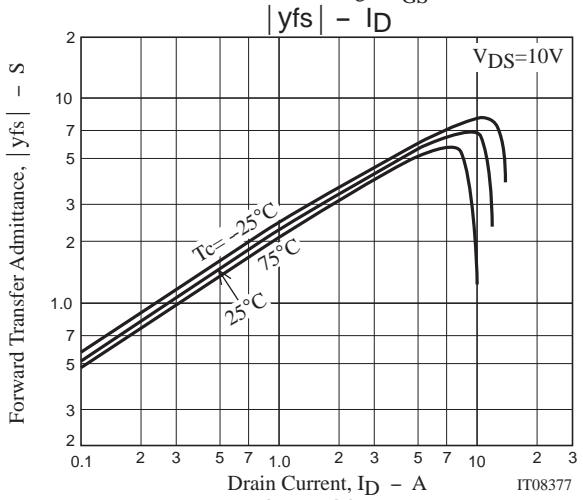
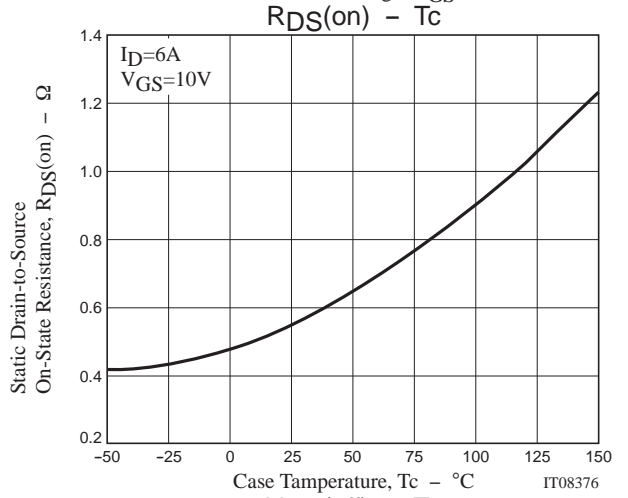
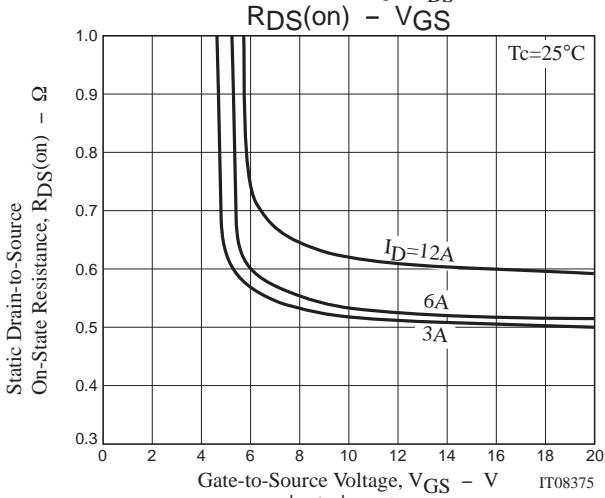
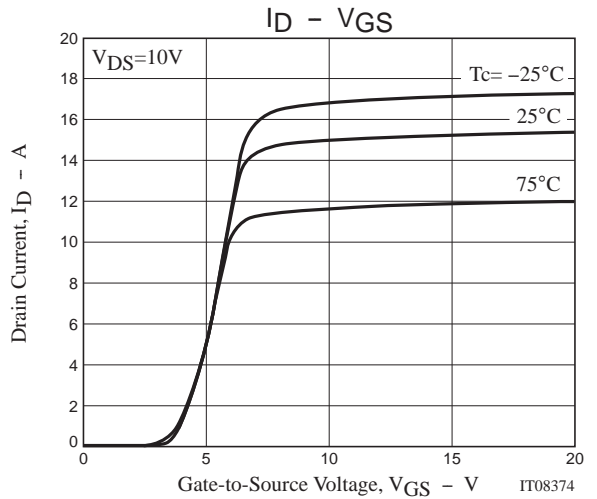
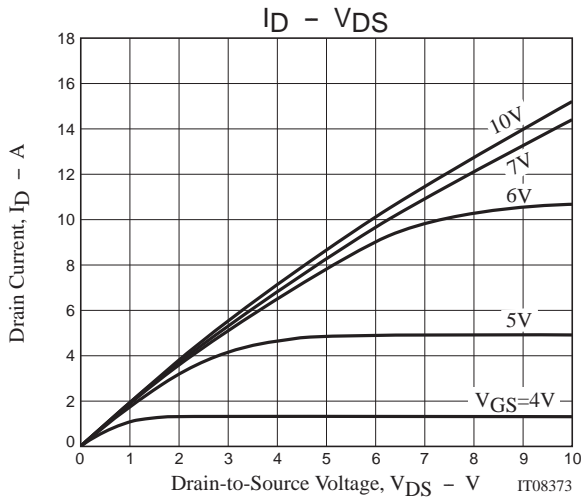
**Package Dimensions**

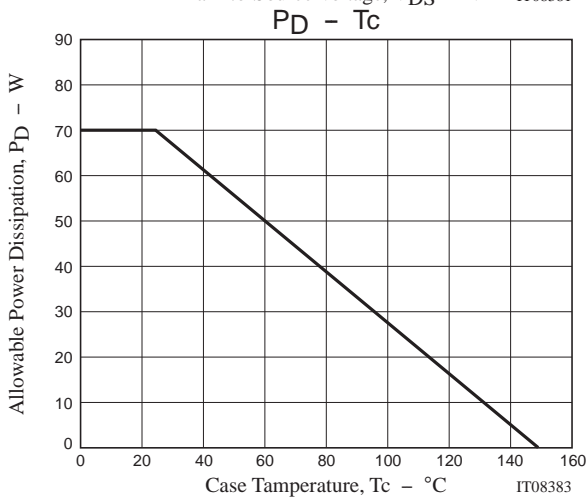
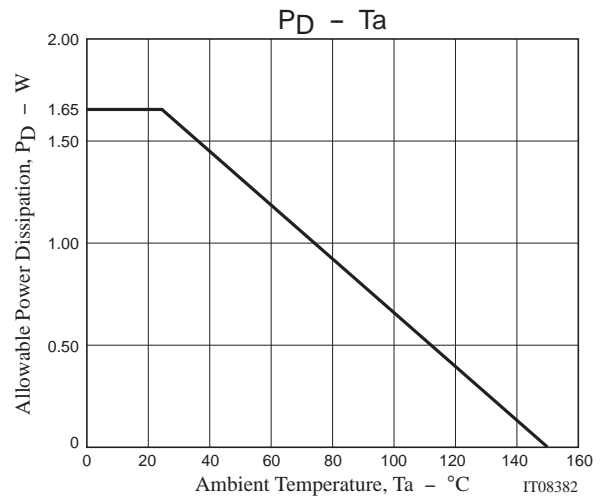
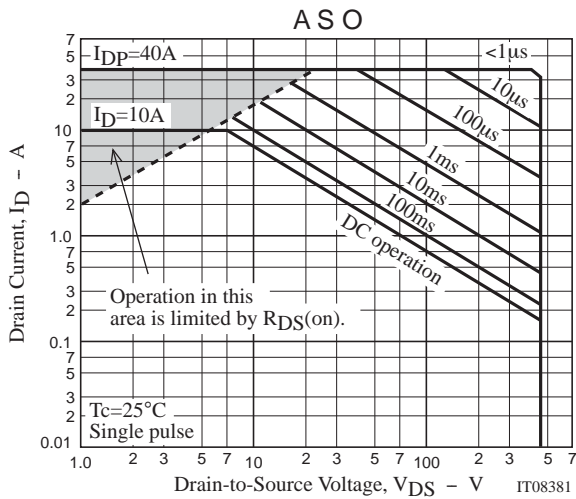
unit : mm(typ)  
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**Switching Time Test Circuit**







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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