



CHENMKO ENTERPRISE CO.,LTD

Halogens free devices

SURFACE MOUNT

N-Channel Enhancement Mode Field Effect Transistor

VOLTAGE 30 Volts CURRENT 100 mAmpere

2SK3541VGP

APPLICATION

* Interfacing, switching (30V, 100mA)

FEATURE

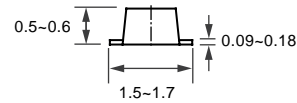
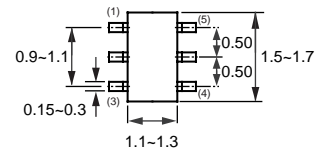
- * Small surface mounting type. (SOT-563)
- * Low on-resistance
- * Fast switching speed
- * Easily designed drive circuits
- * Easy to parallel

CONSTRUCTION

Silicon N-Channel MOSFET



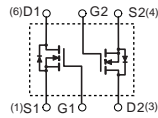
SOT-563



Dimensions in millimeters

SOT-563

CIRCUIT



Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	2SK3541VGP	Units
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage - Continuous	± 20	V
I_D	Drain Current - Continuous	100	mA
	- Pulsed (Note1)	400	mA
I_{DR}	Reverse Drain Current - Continuous	100	mA
	- Pulsed (Note1)	400	mA
P_D	Power Dissipation (Note2)	150	mW
T_J	Operating Temperature Range	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Note:

1. $P_w < 10\mu\text{A}$, Duty cycle $< 1\%$
2. With each pin mounted on the recommended land

2007-04

RATING CHARACTERISTIC CURVES (2SK3541VGP)

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 10\mu\text{A}$	30			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$			1	μA
					0.5	mA
I_{GSSF}	Gate - Body Leakage, Forward	$V_{GS} = 20\text{ V}, V_{DS} = 0\text{ V}$			1	μA
I_{GSSR}	Gate - Body Leakage, Reverse	$V_{GS} = -20\text{ V}, V_{DS} = 0\text{ V}$			-1	μA

ON CHARACTERISTICS

$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = 3\text{ V}, I_D = 100\mu\text{A}$	0.8		1.65	V
$R_{DS(on)}$	Static Drain-Source On-Resistance	$V_{GS} = 4.0\text{ V}, I_D = 10\text{ mA}$		5.0	8.0	Ω
		$V_{GS} = 2.5\text{ V}, I_D = 1.0\text{ mA}$		7.0	13	
g_{FS}	Forward Transconductance	$V_{DS} = 3.0\text{ V}, I_D = 10\text{ mA}$	20			mS

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{DS} = 5.0\text{ V}, V_{GS} = 0\text{ V},$ $f = 1.0\text{ MHz}$		13		pF
C_{oss}	Output Capacitance			9		
C_{rss}	Reverse Transfer Capacitance			4		
t_{on}	Turn-On Time	$V_{DD} = 5.0\text{ V}, R_L = 500\Omega,$ $I_D = 10\text{ mA}, V_{GS} = 5.0\text{ V},$ $R_{GEN} = 10\Omega$		15		nS
t_r				35		
t_{off}	Turn-Off Time	$V_{DD} = 5.0\text{ V}, R_L = 500\Omega,$ $I_D = 10\text{ mA}, V_{GS} = 5.0\text{ V},$ $R_{GEN} = 10\Omega$		80		nS
t_f				80		

RATING CHARACTERISTIC CURVES (2SK3541VGP)

Typical Electrical Characteristics

FIG. 1 TYPICAL TRANSFER CHARACTERISTICS

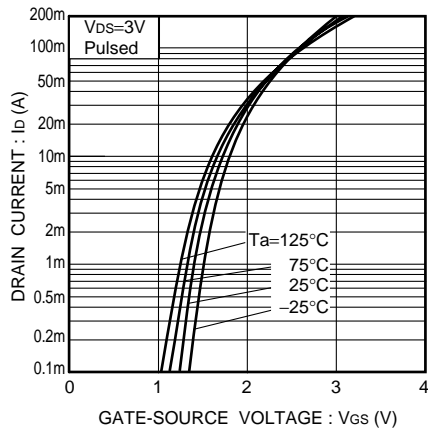


FIG. 2 REVERSE DRAIN CURRENT V.S SOURCE-DRAIN VOLTAGE

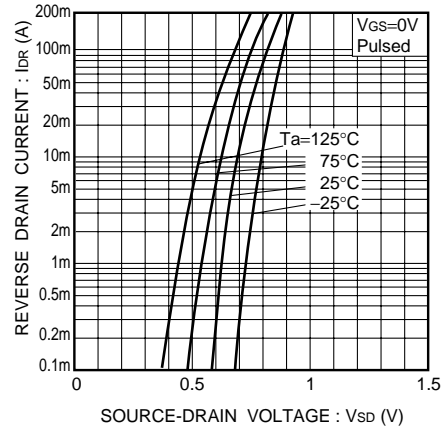


FIG. 3 GATE THRESHOLD VOLTAGE V.S CHANNEL TEMPERATURE

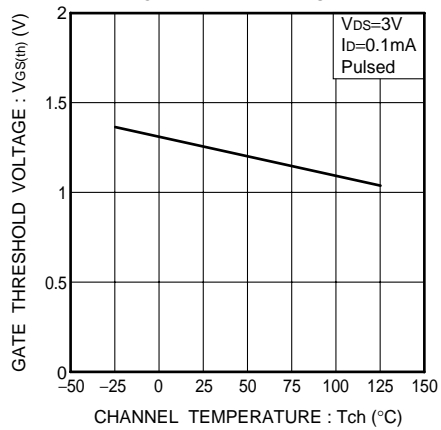
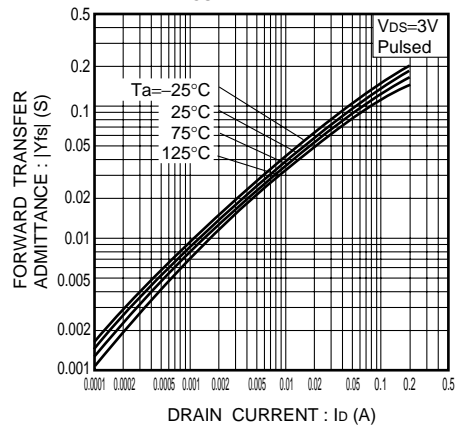


FIG. 4 FORWARD TRANSFER ADMITTANCE V.S DRAIN CURRENT



RATING CHARACTERISTIC CURVES (2SK3541VGP)

Typical Electrical Characteristics (continued)

FIG. 5 STATIC DRAIN-SOURCE ON-STATE RESISTANCE V.S DRAIN CURRENT

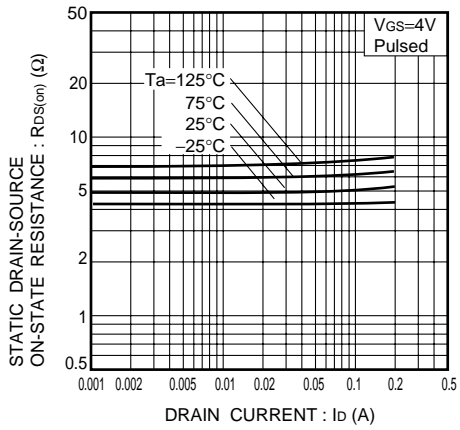


FIG. 6 STATIC DRAIN-SOURCE ON-STATE RESISTANCE V.S DRAIN CURRENT

