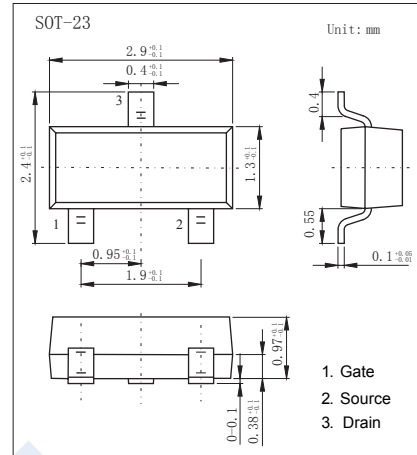
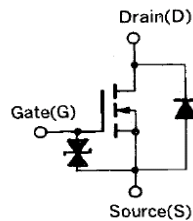


## N-Channel MOSFET

### 2SK1590

#### ■ Features

- $V_{DS}$  (V) = 60V
- $I_D$  = 0.2 A
- $R_{DS(ON)} < 3 \Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 6 \Omega$  ( $V_{GS} = 4V$ )



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current	$I_D$	0.2	A
Pulsed Drain Current (Note.1)	$I_{DM}$	0.4	
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

Note.1:  $PW \leq 10\text{ms}$ , Duty Cycle  $\leq 50\%$

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{DSS}$	$I_D=250 \mu\text{A}$ , $V_{GS}=0V$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V$ , $V_{GS}=0V$			1	$\mu\text{A}$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS}=0V$ , $V_{GS}=\pm 20V$			$\pm 10$	$\mu\text{A}$
Gate Cutt-off Voltage	$V_{GS(off)}$	$V_{DS}=5V$ , $I_D=1\mu\text{A}$	0.8		1.8	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ , $I_D=10\text{mA}$			3	$\Omega$
		$V_{GS}=4V$ , $I_D=10\text{mA}$			6	
Forward Transconductance	$g_{FS}$	$V_{DS}=5V$ , $I_D=10\text{mA}$	20	65		mS
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ , $V_{DS}=5V$ , $f=1\text{MHz}$		26		pF
Output Capacitance	$C_{oss}$			20		
Reverse Transfer Capacitance	$C_{rss}$			4		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS(on)}=5V$ , $V_{DS}=5V$ , $I_D=10\text{mA}$ , $R_L=500 \Omega$ , $R_G=10 \Omega$		50		ns
Turn-On Rise Time	$t_r$			140		
Turn-Off DelayTime	$t_{d(off)}$			200		
Turn-Off Fall Time	$t_f$			190		

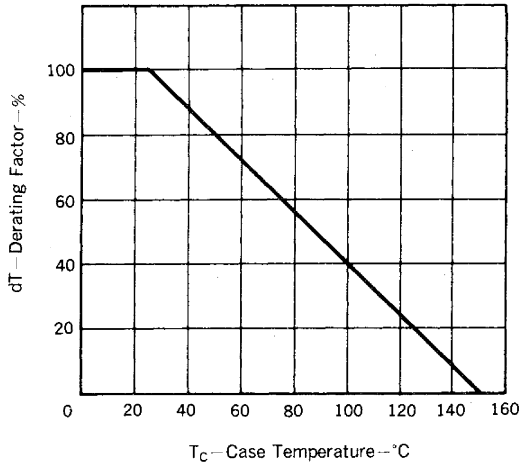
#### ■ Marking

Marking	G16
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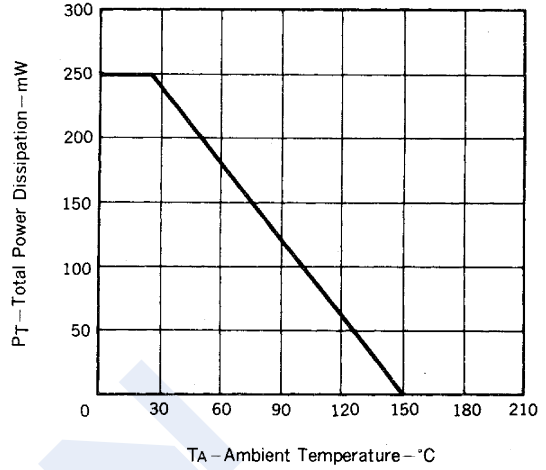
## N-Channel MOSFET 2SK1590

### Typical Characteristics

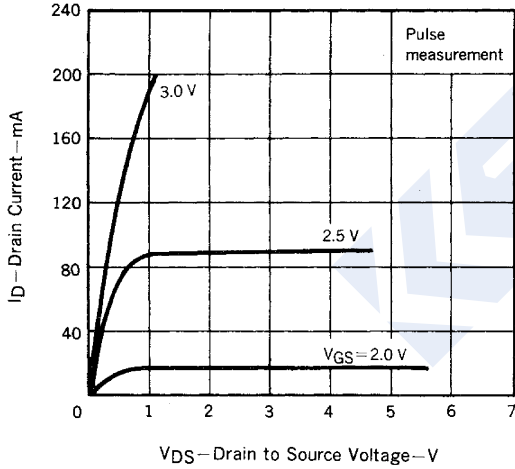
DERATING FACTOR OF FORWARD BIAS SAFE OPERATION AREA



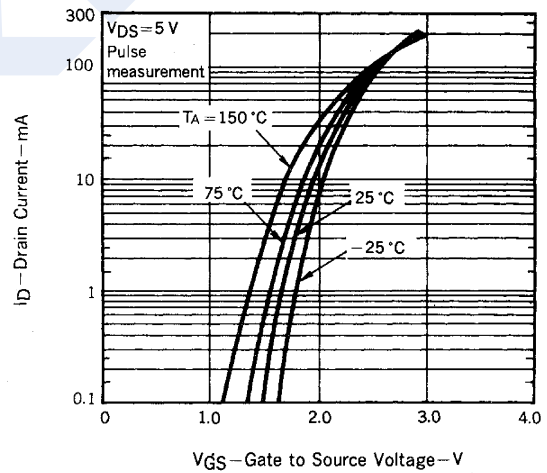
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



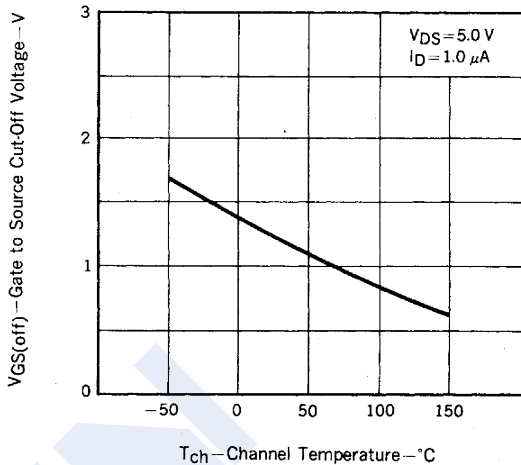
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



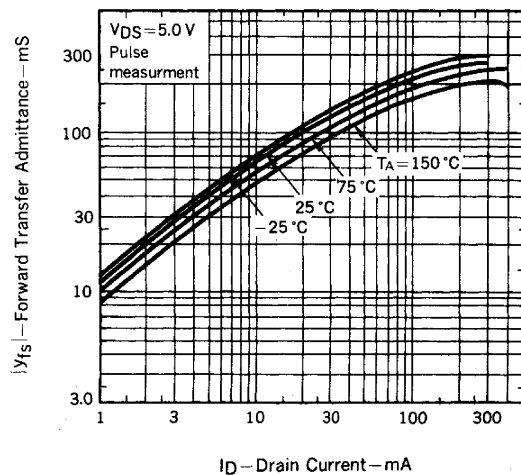
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



## N-Channel MOSFET 2SK1590

■ Typical Characteristics

