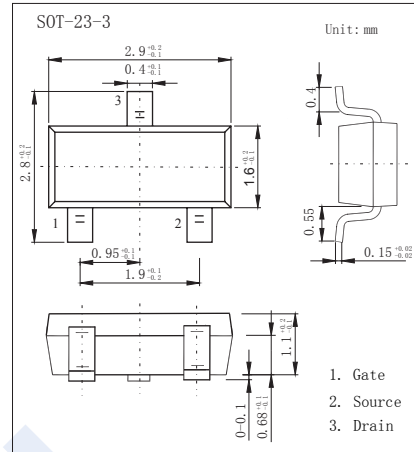
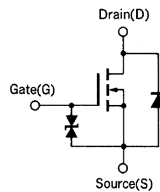


N-Channel MOSFET

2SK1657

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 0.1A$
- $R_{DS(ON)} < 45 \Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 25 \Omega$ ($V_{GS} = 4V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 7	
Continuous Drain Current	I_D	100	mA
Pulsed Drain Current (Note.1)	I_{DM}	200	
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	$^\circ C$
Operating Temperature	T_{opt}	-55 to 80	
Storage Temperature Range	T_{stg}	-55 to 150	

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

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = 250 \mu A$, $V_{GS} = 0V$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V$, $V_{GS} = 0V$			10	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V$, $V_{GS} = \pm 3V$			± 5	μA
Gate Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 3V$, $I_D = 1\mu A$	0.9		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V$, $I_D = 10mA$			45	Ω
		$V_{GS} = 4V$, $I_D = 10mA$			25	
Forward Transconductance	g_{FS}	$V_{DS} = 3V$, $I_D = 10mA$	20	40		ms
Input Capacitance	C_{iss}	$V_{GS} = 0V$, $V_{DS} = 3V$, $f = 1MHz$		15		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			1.5		
Turn-On Delay Time	$t_{d(on)}$				95	
Turn-On Rise Time	t_r	$V_{GS(on)} = 3V$, $V_{DS} = 3V$, $I_D = 10mA$, $R_L = 300 \Omega$, $R_G = 10 \Omega$		360		
Turn-Off Delay Time	$t_{d(off)}$			160		
Turn-Off Fall Time	t_f			150		

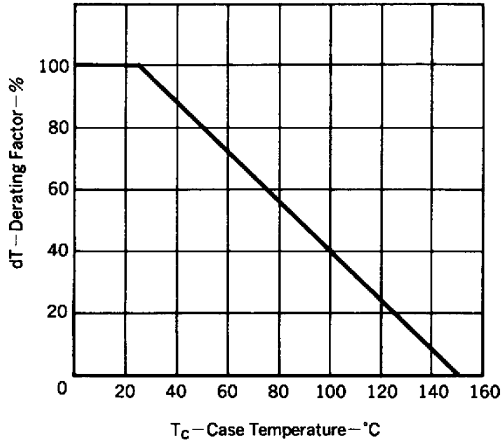
■ Marking

Marking	G19
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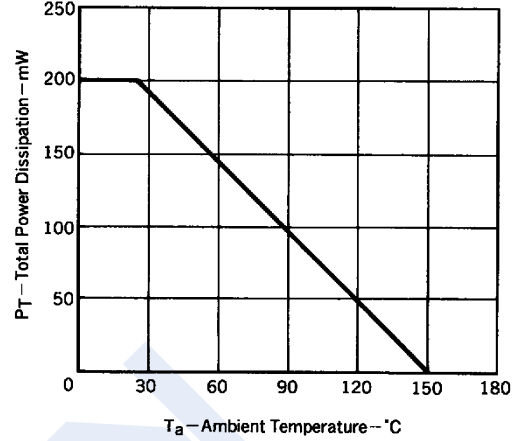
N-Channel MOSFET 2SK1657

Typical Characteristics

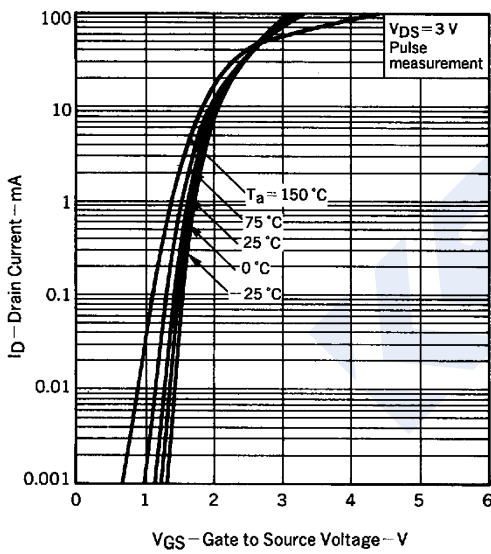
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



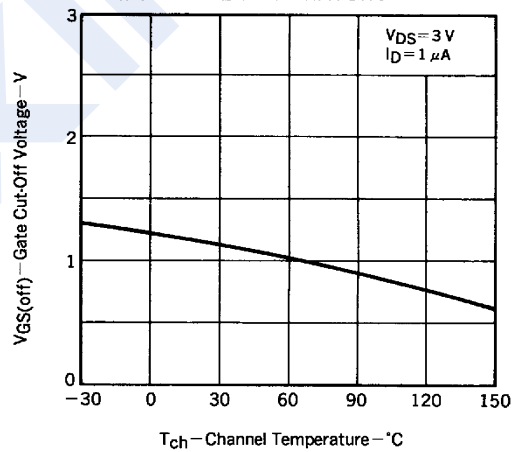
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



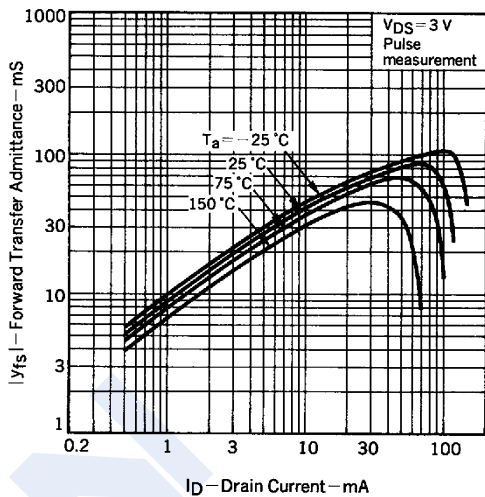
TRANSFER CHARACTERISTICS



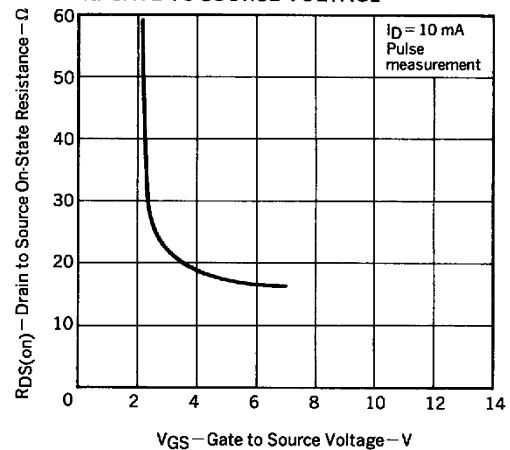
GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



N-Channel MOSFET 2SK1657

Typical Characteristics

