

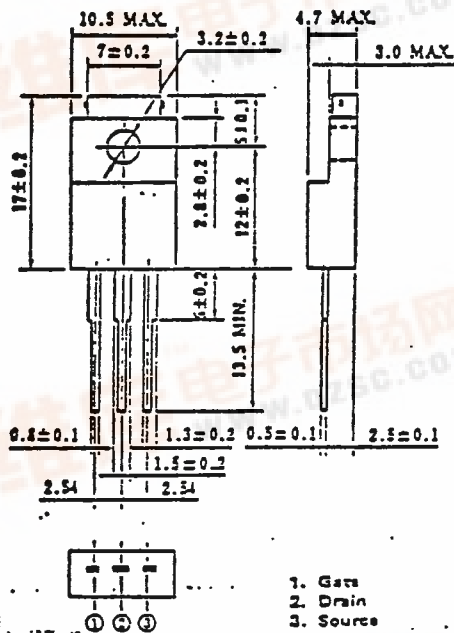


MOS FIELD EFFECT TRANSISTOR

2SK815

FAST SWITCHING
N-CHANNEL SILICON POWER MOS FET

PACKAGE DIMENSIONS
(Unit: mm)



Features

- Suitable for switching power supplies, actuator controls and pulse circuits
- 4V Gate Drive — Logic level —
- Low RDS(on)
- Large Current Switching : $I_D(DC)=21A$
- No Second breakdown

Absolute Maximum Ratings($T_a=25^\circ C$)

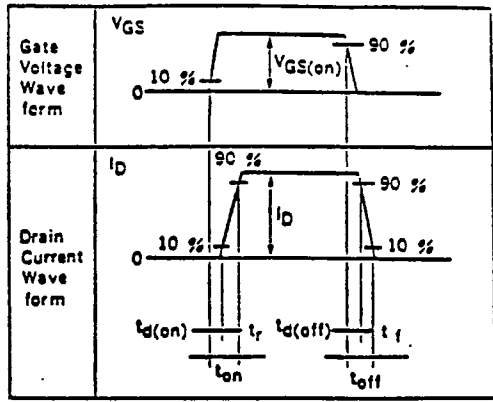
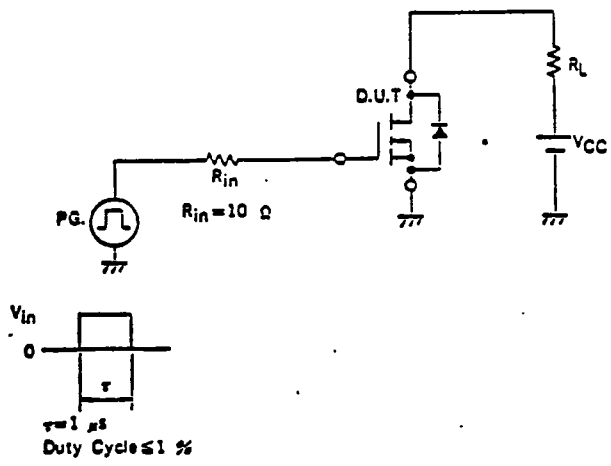
Drain to Source Voltage	V _{DSS}	100V
Gate to Source Voltage	V _{GSS}	± 20V
Continuous Drain Current	I _{D(DC)}	± 21A
Pulse Drain Current	I _{D(pulse)} *	± 81A
Total Power Dissipation	P _T	2.0W
Total Power Dissipation	P _T **	35W
Channel Temperature	T _{ch}	150 °C
Storage Temperature	T _{stg}	-55to+150 °C
	* T _{ch} ≤ 150 °C	
	** T _c = 25 °C	

Electrical Characteristics ($T_a=25^\circ C$)

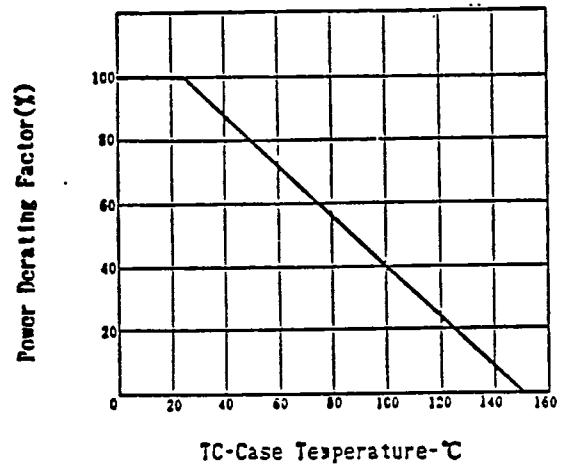
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I _{DSS}			10	μA	V _D =100V, V _G =0
Gate to Source Leakage Current	I _{GSS}			±100	nA	V _G =±20V, V _D =0
Gate to Source Cutoff Voltage	V _G (off)	1.0		2.5	V	V _D =10V, I _D =1.0mA
Forward Transfer Admittance	y _{fs}	6.0	16		S	V _D =10V, I _D =15A
Drain To Source On-State Resistance	R _{DS(on)}		0.07	0.085	Ω	V _G =10V, I _D =15A
Drain to Source On-State Resistance	R _{DS(on)}		0.09	0.15	Ω	V _G =4.0V, I _D =15A
Input Capacitance	C _{iss}		2100		pF	V _D = 10V
Output Capacitance	C _{oss}		630		pF	V _G =0
Reverse Transfer Capacitance	C _{rss}		100		pF	f=1.0MHz
Turn-On Delay Time	t _{d(on)}		20		ns	I _D = 15A
Rise Time	t _r		10		ns	V _G (on)= 10V
Turn-Off Delay Time	t _{d(off)}		110		ns	V _{CC} = 20V
Fall Time	t _f		110		ns	R _L =2 Ω

6427525 N E C ELECTRONICS INC
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

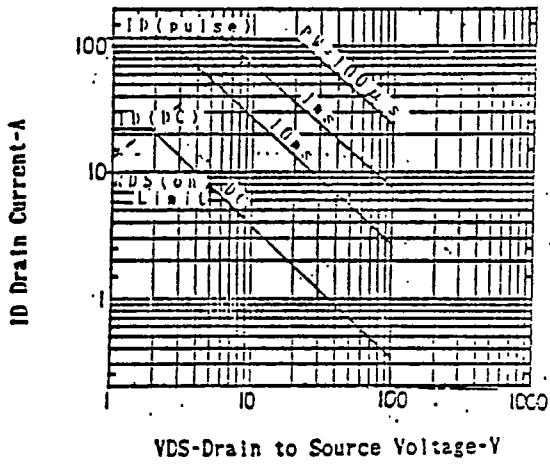
98D 18979 D T-39-11



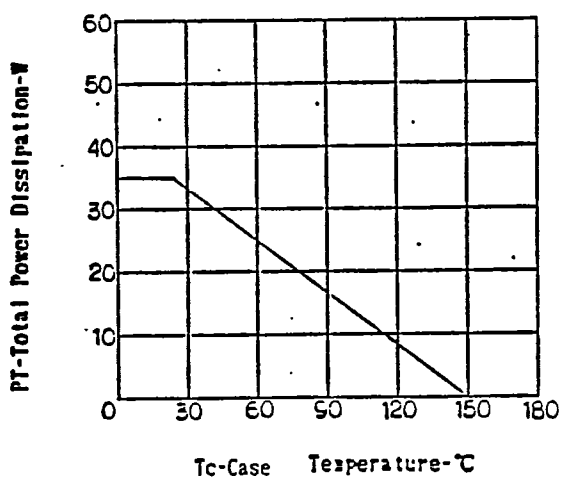
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



FORWARD BIAS SAFE OPERATING AREA



TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE

