

این دیتاشیت توسط توکل الکترونیک تهیه و ارائه شده است.
جهت مشاهده قیمت، موجودی و ثبت سفارش این قطعه به وبسایت توکل الکترونیک مراجعه فرمایید.

**مشاهده قیمت و خرید**

برای خرید و مشاهده سایر محصولات کلیک کنید

**DATA SHEET****NEC****MOS FIELD EFFECT POWER TRANSISTOR
2SK1286****SWITCHING
N-CHANNEL POWER MOS FET
INDUSTRIAL USE****DESCRIPTION**

The 2SK1286 is N-channel MOS Field Effect Transistor designed for solenoid, motor and lamp driver.

FEATURES

- Low On-state Resistance
 $R_{DS(on)} \leq 70 \text{ m}\Omega$ ($V_{GS} = 10 \text{ V}$, $I_D = 8 \text{ A}$)
 $R_{DS(on)} \leq 95 \text{ m}\Omega$ ($V_{GS} = 4 \text{ V}$, $I_D = 8 \text{ A}$)
- Low C_{iss} $C_{iss} = 1400 \text{ pF TYP.}$
- Built-in G-S Gate Protection Diodes

QUALITY GRADE

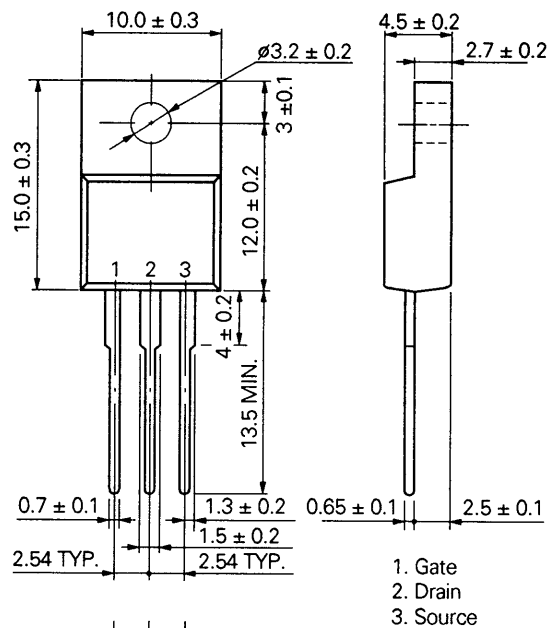
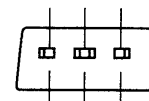
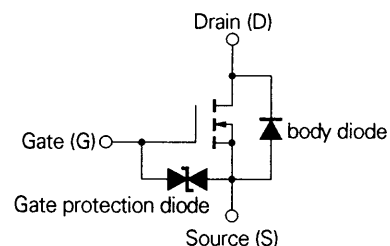
Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

Drain to Source Voltage	V_{DSS}	60	V
Gate to Source Voltage	$V_{GSS(AC)}$	± 20	V
Drain Current (DC)	$I_D(DC)$	± 15	A
Drain Current (pulse)	$I_D(pulse)^*$	± 60	A
Total Power Dissipation ($T_a = 25^\circ\text{C}$)	P_{T1}	2.0	W
Total Power Dissipation ($T_c = 25^\circ\text{C}$)	P_{T2}	30	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

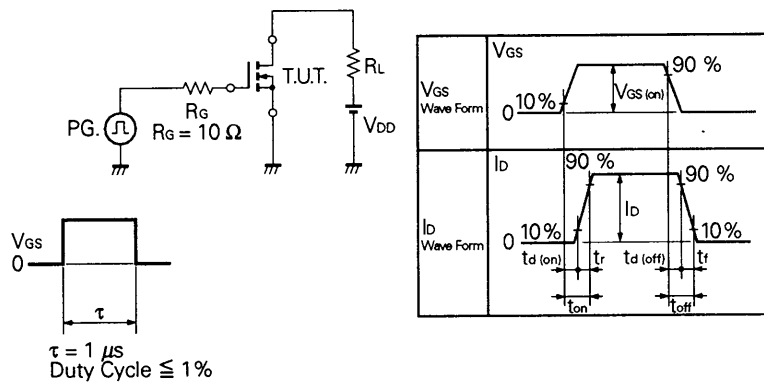
* $PW \leq 10 \mu\text{s}$, Duty Cycle $\leq 1\%$

PACKAGE DIMENSIONS
(in millimeters)

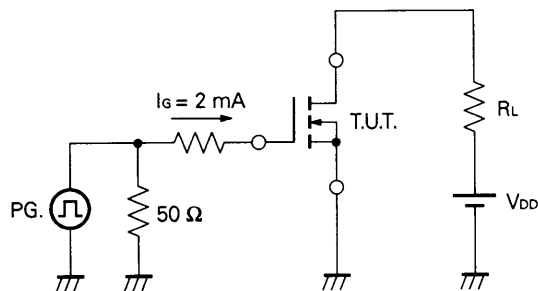
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain to Source On-state Resistance	$R_{DS(on)}$		55	70	$\text{m}\Omega$	$V_{GS} = 10\text{ V}$, $I_D = 8\text{ A}$
Drain to Source On-state Resistance	$R_{DS(on)}$		80	95	$\text{m}\Omega$	$V_{GS} = 4.0\text{ V}$, $I_D = 8\text{ A}$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.0		2.5	V	$V_{DS} = 10\text{ V}$, $I_D = 1\text{ mA}$
Forward Transfer Admittance	$ y_{fs} $	7.0	14		S	$V_{DS} = 10\text{ V}$, $I_D = 8\text{ A}$
Drain Leakage Current	I_{DSS}			10	μA	$V_{DS} = 60\text{ V}$, $V_{GS} = 0$
Gate to Source Leakage Current	I_{GSS}			± 10	μA	$V_{GS} = \pm 20\text{ V}$, $V_{DS} = 0$
Input Capacitance	C_{iss}		1 400		pF	$V_{DS} = 10\text{ V}$ $V_{GS} = 0$ $f = 1\text{ MHz}$
Output Capacitance	C_{oss}		500		pF	
Reverse Transfer Capacitance	C_{rss}		130		pF	
Turn-On Delay Time	$t_{d(on)}$		25		ns	$V_{GS(on)} = 10\text{ V}$ $V_{DD} = 30\text{ V}$ $I_D = 10\text{ A}$, $R_G = 10\ \Omega$ $R_L = 3.0\ \Omega$
Rise Time	t_r		160		ns	
Turn-Off Delay Time	$t_{d(off)}$		130		ns	
Fall Time	t_f		80		ns	
Total Gate Charge	Q_G		30		nC	$V_{GS} = 10\text{ V}$ $I_D = 20\text{ A}$ $V_{DD} = 48\text{ V}$
Gate to Source Charge	Q_{GS}		5		nC	
Gate to Drain Charge	Q_{GD}		10		nC	
Diode Forward Voltage	V_{SD}		1.0		V	$I_{SD} = 15\text{ A}$, $V_{GS} = 0$
Reverse Recovery Time	t_{rr}		150		ns	$I_F = 20\text{ A}$, $V_{GS} = 0$
Reverse Recovery Charge	Q_{rr}		250		nC	$di/dt = 50\text{ A}/\mu\text{s}$

Test Circuit 1: Switching Time

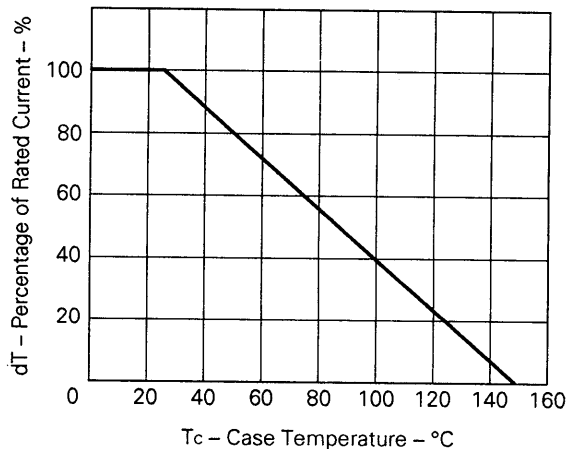


Test Circuit 2: Gate Charge

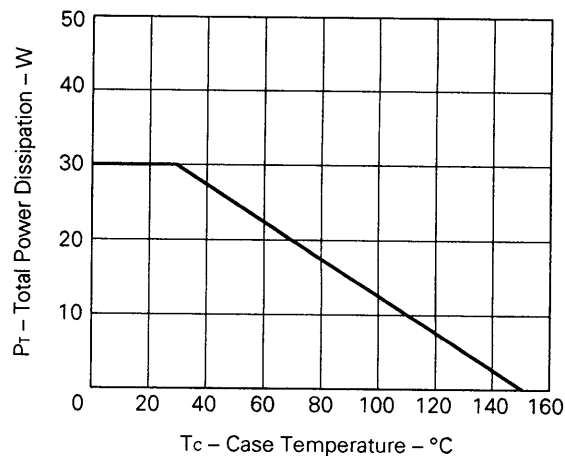


TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

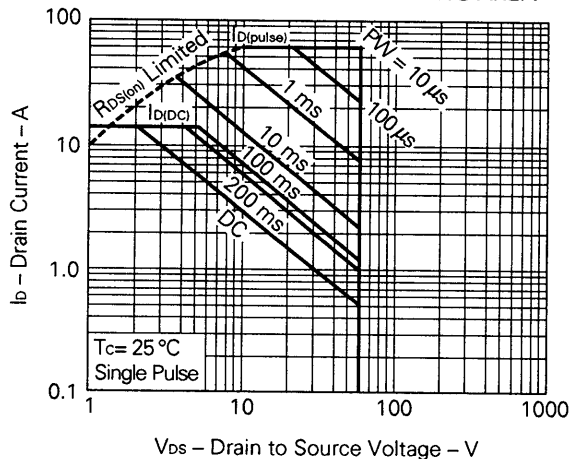
DERATING FACTOR OF FORWARD BIAS
SAFE OPERATING AREA



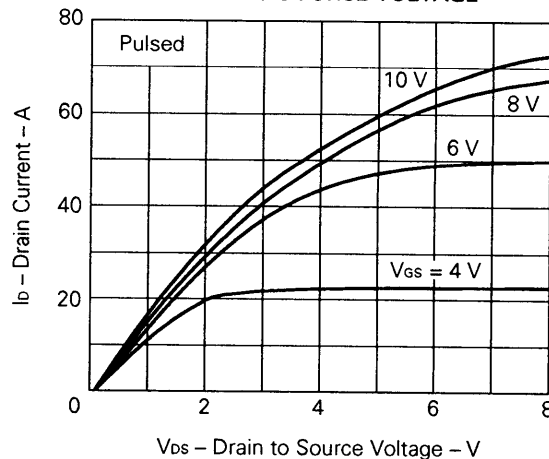
TOTAL POWER DISSIPATION vs.
CASE TEMPERATURE



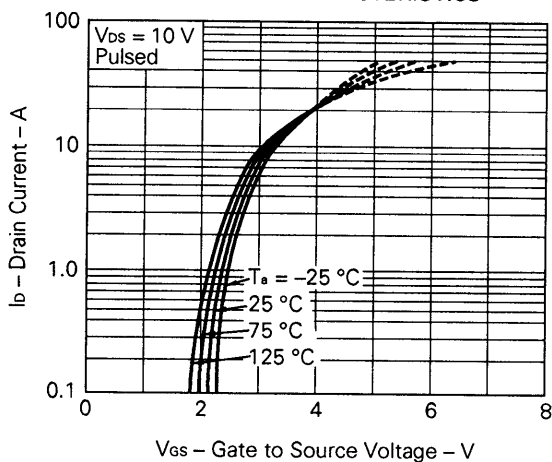
FORWARD BIAS SAFE OPERATING AREA

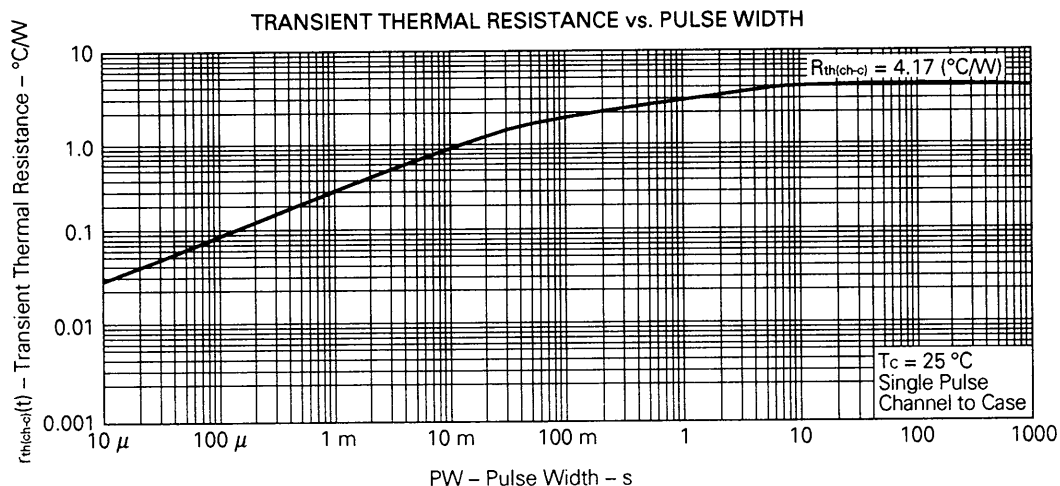
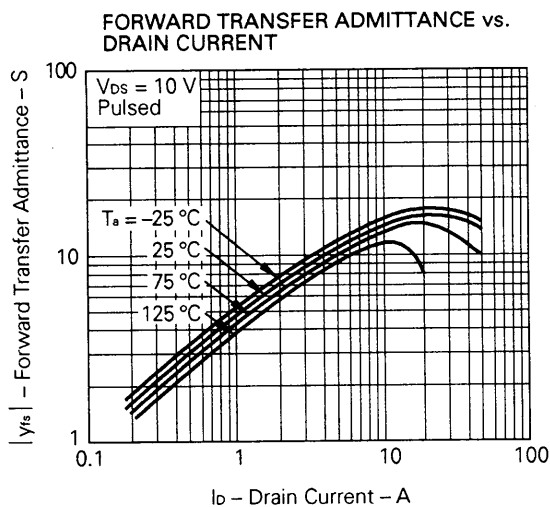
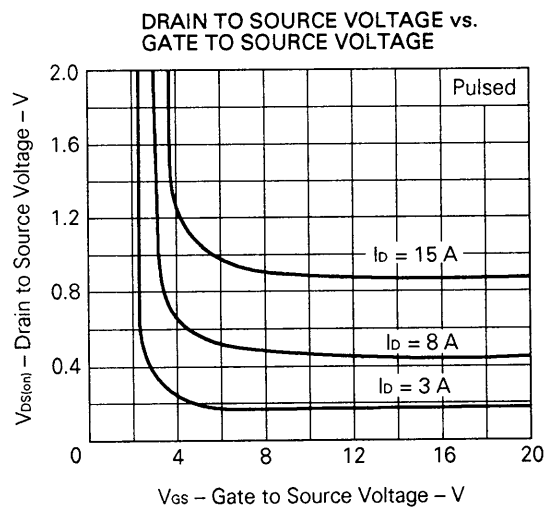
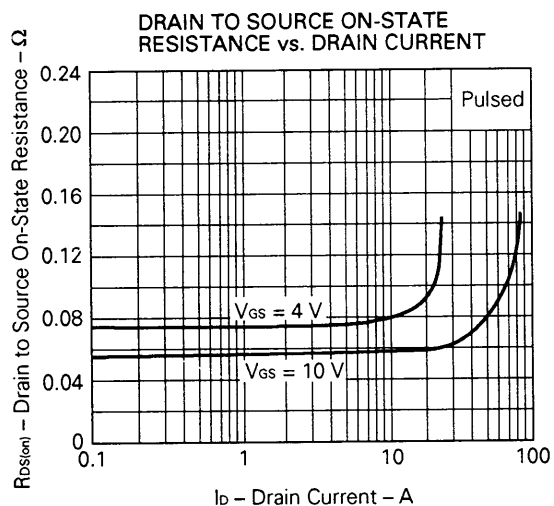
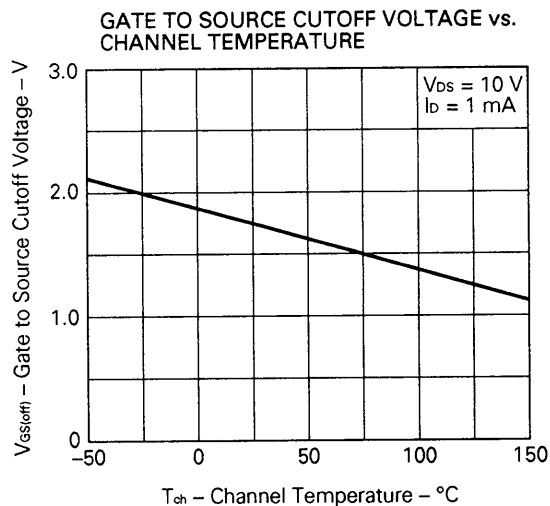


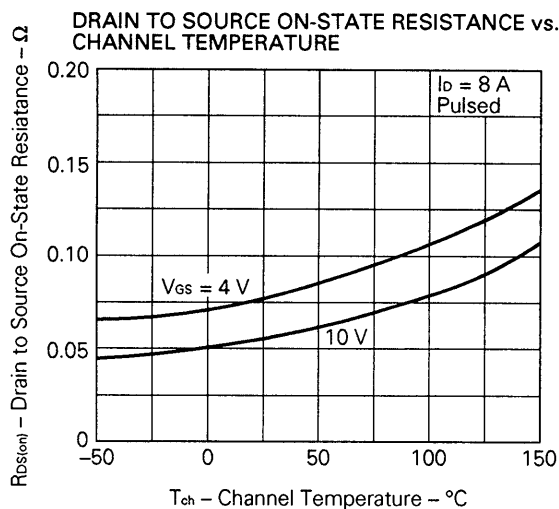
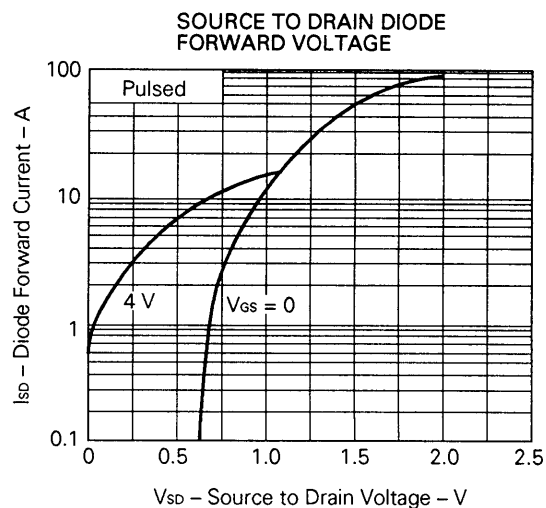
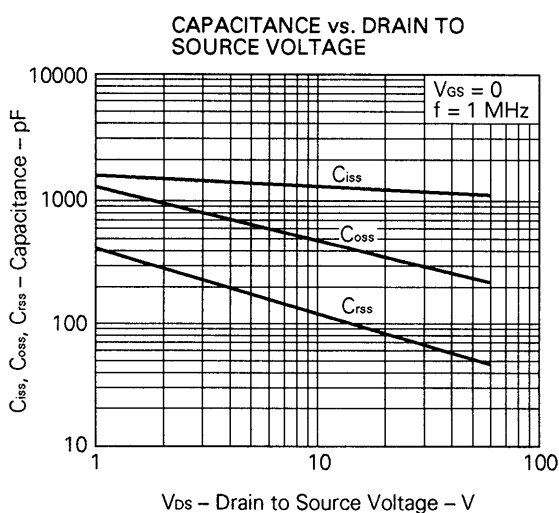
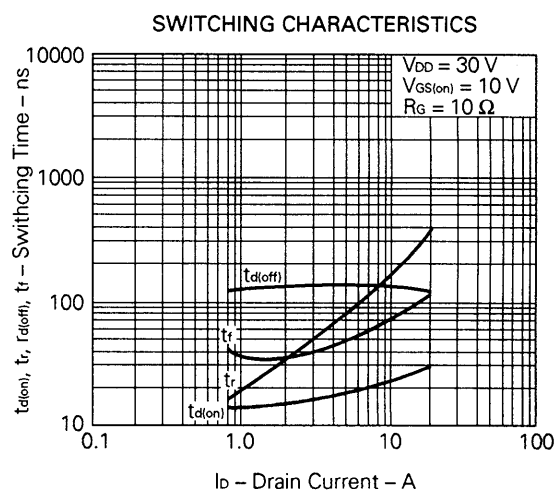
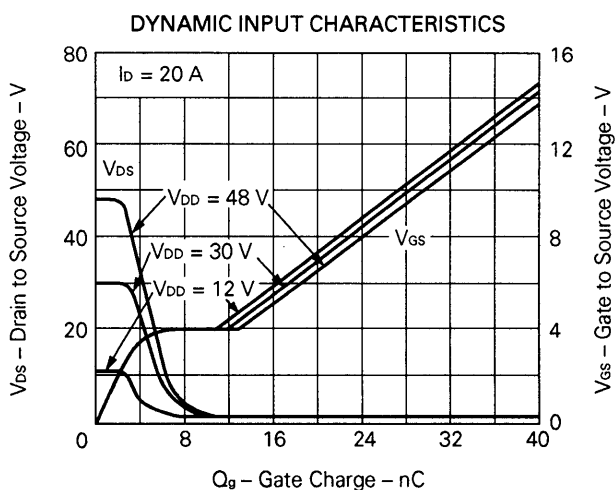
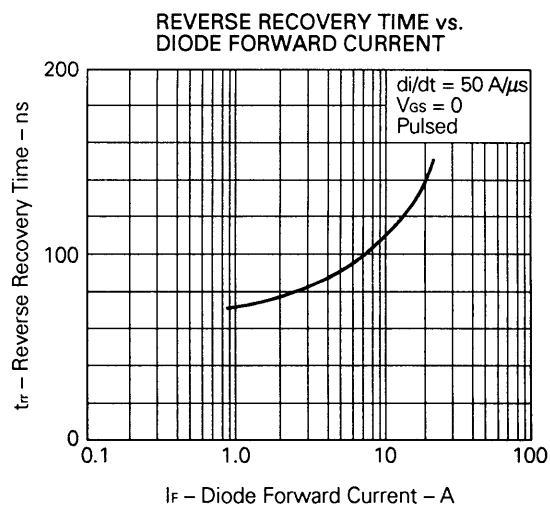
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



TRANSFER CHARACTERISTICS







Reference

Application note name	No.
Safe operating area of Power MOS FET.	TEA-1034
Application circuit using Power MOS FET.	TEA-1035
Quality control of NEC semiconductors devices.	TEI-1202
Quality control guide of semiconductors devices.	MEI-1202
Assembly manual of semiconductors devices.	IEI-1207

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