

MSK1N3

N-Channel Logic Level Enhancement Mode MOSFET

Description

The MSK 1N3 is a N-channel enhancement-mode MOSFET.

Features

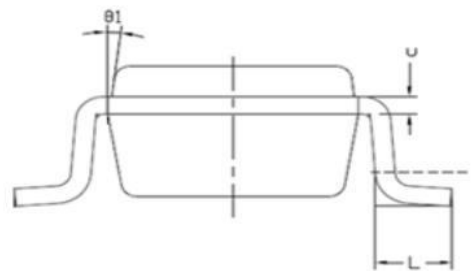
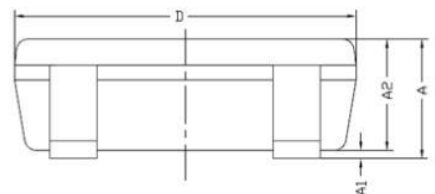
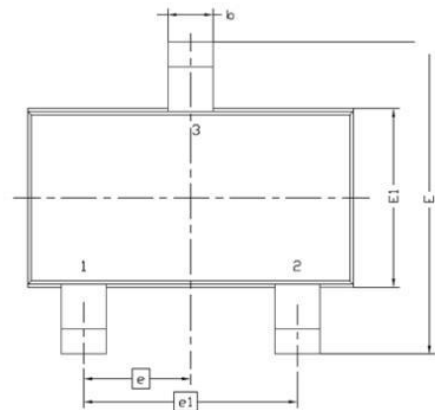
- Low on-resistance
- High ESD
- High speed switching
- Low-voltage drive (4V)
- Easily designed drive circuits
- Easy to use in parallel
- RoHS compliant package

Packing & Order Information

3,000/Reel

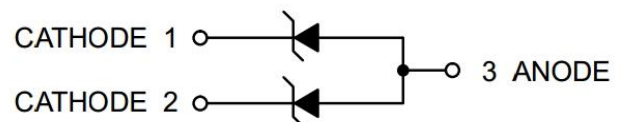


RoHS
COMPLIANT



Symbol	MILLIMETERS	
	MIN	MAX
A	0.8	1.2
A1	0	0.1
A2	0.7	1.1
b	0.3	0.5
c	0.1	0.2
D	2.7	3.1
E	2.6	3
E1	1.4	1.8
e	0.95 BSC	
e1	1.9 BSC	
L	0.3	0.6
θ1	7° NOM	

Graphic symbol



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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (Ta=25°C)

Symbol	Parameter	Value	Unit
V _{DS}	Drain-Source Voltage	20	V
V _{GS}	Gate-Source Voltage	±8	V
I _D	Drain Current -Continuous (T _A =25°C)	6	A
	Drain Current -Continuous (T _A =70°C)	3.6	A
I _{DM}	Pulsed Drain Current	22	A
P _D	Total Power Dissipation (T _A =25°C)	0.83	W
	Total Power Dissipation (T _A =70°C)	0.3	W
I _S	Continuous Source Current (Diode Conduction) ^a	1	A
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to +150	°C

Thermal Data

Symbol	Parameter	Max.	Units
R _{θJA}	Maximum Junction-to- Ambient ^a (t≤10 sec)	110	°C/W
R _{θJA}	Maximum Junction-to- Ambient ^a (Steady State)	150	

Note:

1. Surface Mounted on 1"x1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

Electrical Characteristics

Static

Symbol	Test Conditions	Min	Typ.	Max.	Units
V _{SD}	V _{GS} = 0 V , I _S = 1 A	--	0.7	--	V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	20	--	--	V
I _{DSS}	V _{DS} = 24 V , V _{GS} = 0 V	--	--	1	μA
	V _{DS} = 20 V , V _{GS} = 0 V , T _J = 125°C	--	--	30	
I _{GSS}	V _{GS} = ±8 V , V _{DS} = 0	--	--	±10	nA
I _{D(ON)}	V _{DS} = 5 V , V _{GS} = 4.5 V	10	--	--	A
R _{DS(ON)} *1	V _{GS} = 2.5 V, I _D = 5 A	--	--	20	mΩ
	V _{GS} = 4.5 V, I _D = 6 A	--	--	28	
G _{FS} *1	V _{DS} = 15 V, I _D = 6 A		10		S

Dynamic Characteristics

Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
C _{ISS}	Input Capacitance	V _{DS} = 10 V, V _{GS} = 0 V, f = 1.0MHz	--	680	--	pF
C _{OSS}	Output Capacitance		--	144	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	137	--	pF

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Dynamic Characteristics						
Symbol	Parameter	Test Conditions	Min	Typ.	Max.	Units
C_{ISS}	Input Capacitance	$V_{DS} = 10\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1.0\text{ MHz}$	--	680	--	pF
C_{OSS}	Output Capacitance		--	144	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	137	--	pF
Q_g	Total Gate Charge	$V_{DS} = 10\text{ V}$, $I_D = 6\text{ A}$, $V_{GS} = 4.5\text{ V}$	--	13.5	--	nC
Q_{gs}	Gate-Source Charge		--	0.9	--	nC
Q_{gd}	Gate-Drain Charge		--	5.4	--	nC
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 10\text{ V}$, $I_D = 1\text{ A}$, $V_{GEN} = 4.5\text{ V}$, $R_{GEN} = 6\Omega$ $R_L = 10\Omega$	--	6	--	ns
t_r	Rise Time		--	12	--	ns
$t_{d(off)}$	Turn-Off Delay Time		--	65	--	ns
t_f	Fall Time		--	35	--	ns

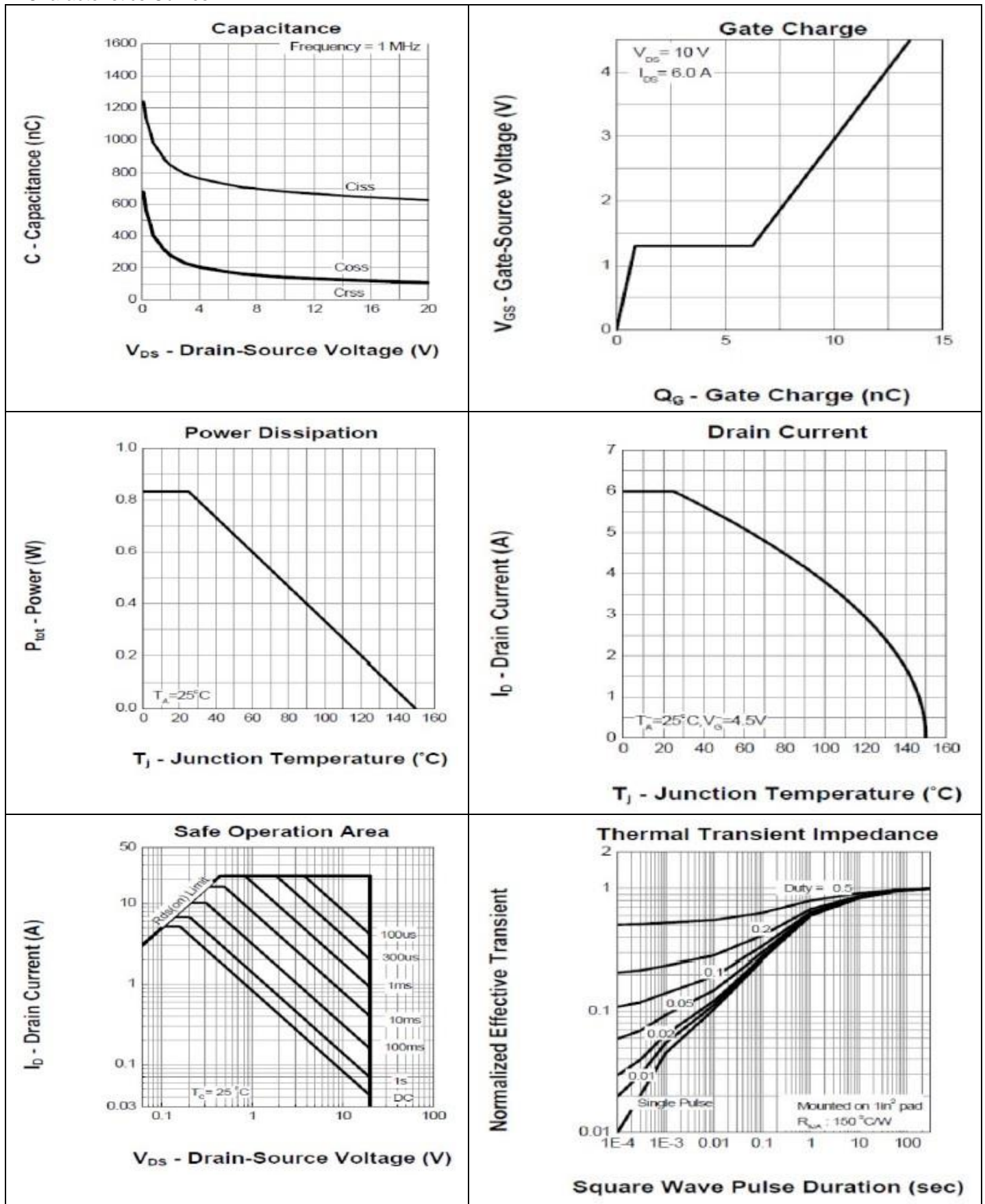
Notes

- Pulse test: $PW \leq 300\mu s$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

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■ Characteristics Curves



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