

5 é / Descriptions

TO-251 .> // x N ?ú 3 MOS « | • 'ož
N-CHANNEL MOSFET in a TO-251 Plastic Package.

□^a / Features

z ð > z F Ø • ¼ , † ½ ož
Low gate charge, low crss, fast switching.

Ð ÷ / Applications

9 ä ä *) *) ô E y ä • ¼ ož
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

Ã w] Ô • / Equivalent Circuit

• Ô - æ / Pinning

PIN1 y G PIN 2 y D PIN 3 y S

, M V / Marking

• - ~^a ¢ ož See Marking Instructions.

① Absolute Maximum Ratings(Ta=25℃ ;)

@ f Parameter	... Z Symbol	f > Rating	% y Unit
Drain-Source Voltage	V _{DSS}	650	V
Drain Current	I _D (Tc=25℃)	2.0	A
Drain Current	I _D (Tc=100℃)	1.3	A
Drain Current - Pulsed	I _{DM}	8	A
Gate-Source Voltage	V _{GS}	±30	V
Single Pulsed Avalanche Energy	E _{AS}	120	mJ
Repetitive Avalanche Energy	E _{AR}	5.4	mJ
Avalanche Current	I _{AR}	2.0	A
Power Dissipation	P _D (Tc=25℃)	28	W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to 150	
Junction to Ambient	R _{θJA}	110	/W
Junction to Case	R _{θJC}	4.46	/W

② Electrical Characteristics(Ta=25℃ ;)

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 > Min	Á ° > Typ	Â Ý > Max	% y Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250 μA	650			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =650V V _{GS} =0V			1.0	A
		V _{DS} =480V T _C =125℃			100	A
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±30V V _{DS} =0V			±0.1	A
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250 μA	2.0		4.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =1.0A		4.3	6.5	
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1.0MHz		325		pF
Output Capacitance	C _{oss}			30		pF
Reverse Transfer Capacitance	C _{rss}			5		pF
Total Gate Charge	Q _G	V _{DS} = 520V, I _D = 2.0A, V _{GS} = 10V		46		nC
Gate-Source Charge	Q _{GS}			4.2		
Gate-Drain Charge	Q _{GD}			8.5		

Electrical Characteristics(Ta=25 ;)

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 > Min	Á ° > Typ	Â Ý > Max	% y Unit
Turn-On Delay Time	t _{d(on)}	V _{DD} =325V I _D =2.0A R _G =25		36		ns
Turn-On Rise Time	t _r			42		
Turn-Off Delay Time	t _{d(off)}			132		
Turn-Off Fall Time	t _f			41		
Maximum Continuous Drain-Source Diode Forward Current	I _S				2.0	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				8	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 2.0A			1.4	V
Reverse Recovery Time	t _{rr}	V _{GS} = 0V, I _S = 2.0A, dI _F /dt = 100 A/ s		182		nS
Reverse Recovery Charge	Q _{rr}			0.8		nC

Ō ? d • Ž ¢ / Electrical Characteristic Curve

Ø □ =) ¢ / Package Dimensions

, M y f / Marking Instructions

BR
2N65

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BR y , [W A
4 y ° Z W A
y ÿ D Z W A k š ÿ D Z J

Note:
BR: Company Code
2N65: Product Type
****: Lot No. Code, code change with Lot No

G PD t ... • Ž Ć (x /) / Temperature Profile for Dip Soldering(Pb-Free)

a Ć y

- 10• Ä ½ “ † 25 ½150 - k ž • 60 ½90sec;
20• Q > “ † 255 r5 - k ž • 4 Ò 5 r0.5sec;
30•D N ò i Ò 0 , † 2 ½10 - /sec.

Note:

- 1.Preheating:25~150 - , Time:60~90sec.
2.Peak Temp.:255 r5 - , Duration:5 r0.5sec.
3. Cooling Speed: 2~10 - /sec.

ÂD /Că p ~ »] / Resistance to Soldering Heat Test Conditions

“ † y 270 r5 - ž • y 10 r1 sec. Temp.:270±5 Time:10±1 sec

G P á / Packaging SPEC.

• ^ x / BULK

Package Type 7>û ~ E	Units ;>û !H					Dimension ;>û p . (unit /mm ³)		
	Units/Bag />Â	Bags/Inner Box >Â/-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Bag>Â	Inner Box	Outer Boxç
TO-251	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

ì ' x / TUBE

Package Type 7>û ~ E	Units ;>û !H					Dimension ;>û p . (unit /mm ³)		
	Units/Tube /•1×	Tubes/Inner Box •1×/-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Tube•1×	Inner Box	Outer Boxç
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

„ Đ y f / Notices