



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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10V Drive Nch MOS FET

RDX080N50

●Structure

Silicon N-channel MOS FET

●Features

- 1) Low on-resistance.
- 2) Low input capacitance.
- 3) Excellent resistance to damage from static electricity.

●Applications

Switching

●Packaging specifications

Type	Package	Bulk
	Code	—
	Basic ordering unit (pieces)	500
RDX080N50		○

●Absolute maximum ratings (Ta=25°C)

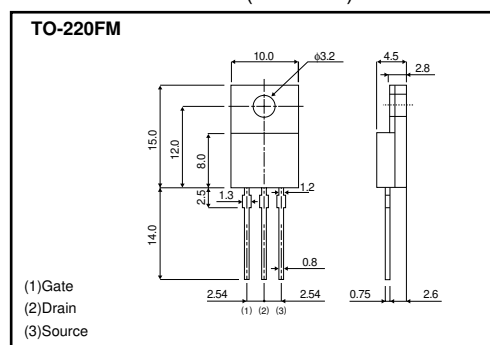
Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	500	V
Gate-source voltage		V_{GSS}	±30	V
Drain current	Continuous	I_D *1	±8	A
	Pulsed	I_{DP} *2	±32	A
Source current (Body diode)	Continuous	I_S	8	A
	Pulsed	I_{SP} *2	32	A
Avalanche current		I_{AS} *3	8	A
Avalanche energy		E_{AS} *4	85	mJ
Total power dissipation (Tc=25°C)		P_D	40	W
Channel temperature		Tch	150	°C
Range of storage temperature		Tstg	-55 to +150	°C

*1 Limited only by maximum temperature allowed *2 $P_w \leq 10\mu s$, Duty cycle $\leq 1\%$ *3 $L \leq 2.3mH$ $V_{DD}=90V$ $R_g=25\Omega$ *4 $L \leq 2.3mH$ $V_{DD}=90V$ $R_g=25\Omega$ starting Tch=25°C

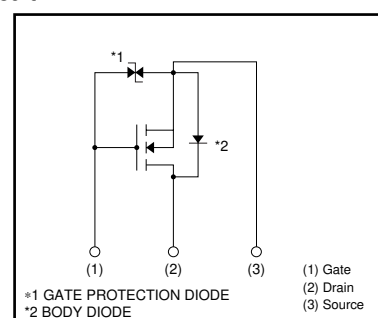
●Thermal resistance

Parameter	Symbol	Limits	Unit
Channel to case	Rth(ch-c)	3.125	°C/W

●External dimensions (Unit : mm)



●Inner circuit



Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±10	μA	$V_{GS} = \pm 25V, V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	500	–	–	V	$I_D = 1mA, V_{GS} = 0V$
Zero gate voltage drain current	I_{DSS}	–	–	25	μA	$V_{DS} = 500V, V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	2.0	–	4.0	V	$V_{DS} = 10V, I_D = 1mA$
Static drain-source on-state resistance	$R_{DS(on)}^*$	–	0.65	0.85	Ω	$I_D = 4A, V_{GS} = 10V$
Forward transfer admittance	$ Y_{fs} ^*$	3	5	–	S	$V_{DS} = 10V, I_D = 4A$
Input capacitance	C_{iss}	–	920	–	pF	$V_{DS} = 25V$
Output capacitance	C_{oss}	–	125	–	pF	$V_{GS} = 0V$
Reverse transfer capacitance	C_{rss}	–	27	–	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}^*$	–	20	–	ns	$V_{DD} = 150V$
Rise time	t_r^*	–	22	–	ns	$I_D = 4A$
Turn-off delay time	$t_{d(off)}^*$	–	55	–	ns	$V_{GS} = 10V$
Fall time	t_f^*	–	30	–	ns	$R_L = 37.5\Omega$
Total gate charge	Q_g^*	–	28	–	nC	$V_{DD} = 250V, V_{GS} = 10V$
Gate-source charge	Q_{gs}^*	–	6.5	–	nC	$I_D = 8A$
Gate-drain charge	Q_{gd}^*	–	12	–	nC	$R_L = 31.3\Omega, R_G = 10\Omega$

*Pulsed

●Body diode characteristics (Source-drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD}^*	–	–	1.5	V	$I_S = 8A, V_{GS} = 0V$
Reverse recovery time	t_{rr}	–	375	–	ns	$I_{DR} = 8A, V_{GS} = 0V$
Reverse recovery charge	Q_{rr}	–	2.5	–	μC	$di/dt = 100A / \mu s$

* Pulsed

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