MITSUBISHI Nch POWER MOSFET

FS10UMA-5A

HIGH-SPEED SWITCHING USE

FS10UMA-5A
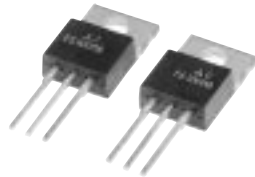
- 10V DRIVE
- V_{DSS} 250V
- $r_{DS (ON)} (MAX)$ 0.52Ω
- I_D 10A

OUTLINE DRAWING   Dimensions in mm
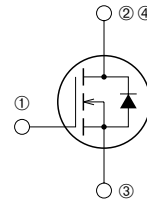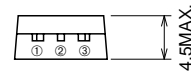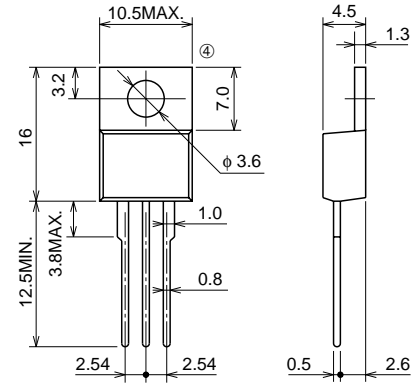
① GATE
② DRAIN
③ SOURCE
④ DRAIN

TO-220

APPLICATION

Cs Switch for CRT Display monitor

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	V_{GS} = 0V	250	V
V_{GSS}	Gate-source voltage	V_{DS} = 0V	±20	V
I_D	Drain current		10	A
I_{DM}	Drain current (Pulsed)		30	A
I_{DA}	Avalanche drain current (Pulsed)	L = 200μH	10	A
P_D	Maximum power dissipation		55	W
T_{ch}	Channel temperature		−55 ~ +150	°C
T_{stg}	Storage temperature		−55 ~ +150	°C
—	Weight	Typical value	2.0	g

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PRELIMINARY

Notice: This is not a final specification.
Some parametric limits are subject to change.

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)DSS}$	Drain-source breakdown voltage	$I_D = 1mA$, $V_{GS} = 0V$	250	—	—	V
I_{GSS}	Gate-source leakage current	$V_{GS} = \pm20V$, $V_{DS} = 0V$	—	—	±10	µA
I_{DSS}	Drain-source leakage current	$V_{DS} = 250V$, $V_{GS} = 0V$	—	—	1	mA
$V_{GS(th)}$	Gate-source threshold voltage	$I_D = 1mA$, $V_{DS} = 10V$	2.0	3.0	4.0	V
$r_{DS(ON)}$	Drain-source on-state resistance	$I_D = 5A$, $V_{GS} = 10V$	—	0.40	0.52	Ω
$V_{DS(ON)}$	Drain-source on-state voltage	$I_D = 5A$, $V_{GS} = 10V$	—	2.00	2.60	V
$|y_{fs}|$	Forward transfer admittance	$I_D = 5A$, $V_{DS} = 10V$	—	9.0	—	S
C_{iss}	Input capacitance	$V_{DS} = 25V$, $V_{GS} = 0V$, $f = 1MHz$	—	950	—	pF
C_{oss}	Output capacitance		—	90	—	pF
C_{rss}	Reverse transfer capacitance		—	25	—	pF
$t_{d(on)}$	Turn-on delay time	$V_{DD} = 150V$, $I_D = 5A$, $V_{GS} = 10V$, $R_{GEN} = R_{GS} = 50Ω$	—	20	—	ns
t_r	Rise time		—	25	—	ns
$t_{d(off)}$	Turn-off delay time		—	150	—	ns
t_f	Fall time		—	40	—	ns
V_{SD}	Source-drain voltage	$I_S = 5A$, $V_{GS} = 0V$	—	0.95	—	V
$R_{th(ch-c)}$	Thermal resistance	Channel to case	—	—	2.27	°C/W

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