
2SJ504

Silicon P Channel MOS FET
High Speed Power Switching

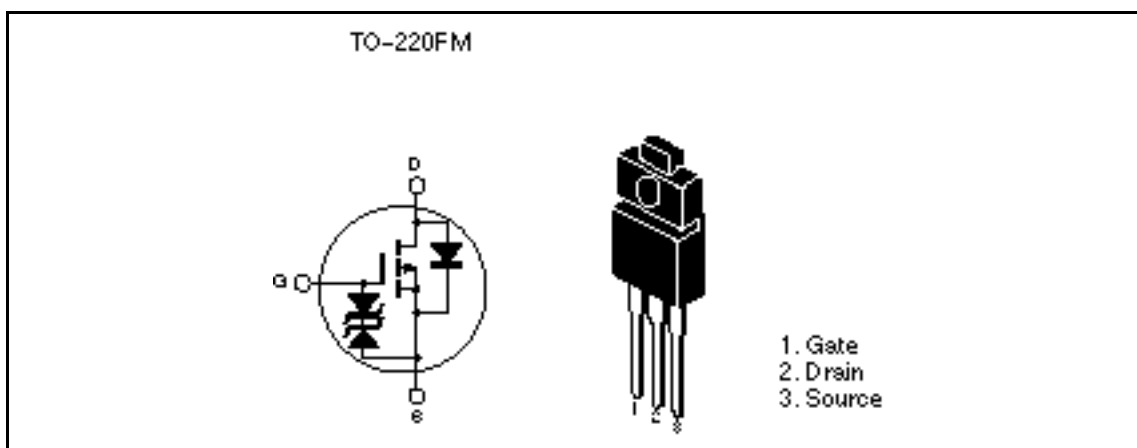
HITACHI

ADE-208-546
Target specification 1st. Edition

Features

- Low on-resistance
 $R_{DS(on)} = 0.042 \text{ typ.}$
- Low drive current.
- 4V gate drive devices.
- High speed switching.

Outline



2SJ504

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	−60	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	−20	A
Drain peak current	$I_{D(pulse)}^{*1}$	−80	A
Body to drain diode reverse drain current	I_{DR}	−20	A
Avalanche current	I_{AP}^{*3}	−20	A
Avalanche energy	E_{AR}^{*3}	34	mJ
Channel dissipation	P_{ch}^{*2}	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Notes: 1. PW 10μs, duty cycle 1 %
2. Value at Tc = 25°C
3. Value at Ta = 25°C, Rg 50 , L=100μH

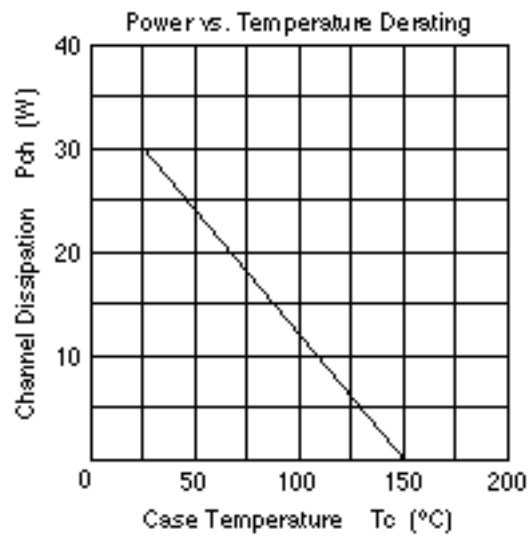
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	—	—	V	$I_D = -10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = ±100μA, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -60V, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = ±16V, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.0	V	$I_D = -1mA, V_{DS} = -10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.042	0.055		$I_D = -10A, V_{GS} = -10V^{*1}$
	$R_{DS(on)}$	—	0.065	0.095		$I_D = -10A, V_{GS} = -4V^{*1}$
Forward transfer admittance	$ y_{fs} $	10	16	—	S	$I_D = 10A, V_{DS} = 10V^{*1}$
Input capacitance	C_{iss}	—	1750	—	pF	$V_{DS} = -10V$
Output capacitance	C_{oss}	—	800	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	180	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	16	—	ns	$V_{GS} = -10V, I_D = -10A$
Rise time	t_r	—	100	—	ns	$R_L = 3$
Turn-off delay time	$t_{d(off)}$	—	230	—	ns	
Fall time	t_f	—	140	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-1.0	—	V	$I_F = -20A, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	100	—	ns	$I_F = -20A, V_{GS} = 0$ $diF/dt = 50A/μs$

Note: 1. Pulse test

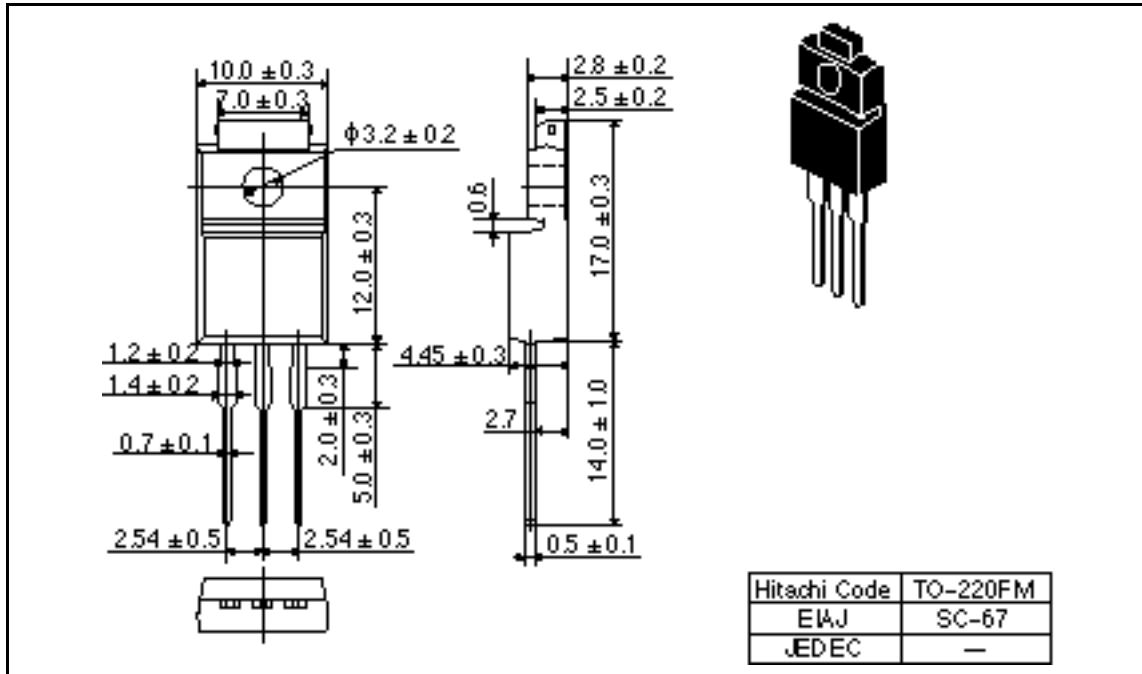
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Main Characteristics



Package Dimensions

Unit: mm



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