

H7P0601DL, H7P0601DS

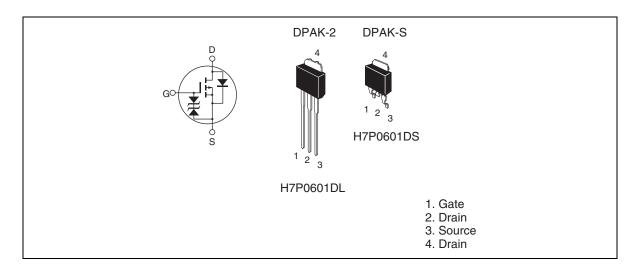
Silicon P Channel MOS FET High Speed Power Switching

REJ03G0044-0100Z Rev.1.00 Aug.05.2003

Features

- Low on-resistance $R_{DS(on)} = 40 \text{ m}\Omega \text{ typ.}$
- Low drive current
- 4.5 V gate drive device can driven from 5 V source

Outline



Absolute Maximum Ratings

 $(Ta = 25^{\circ}C)$

Item	Symbol	Rating	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) ^{Note1}	-80	A
Body-drain diode reverse drain current	I _{DR}	-20	A
Avalanche current	I _{AP} Note3	-12	A
Avalanche energy	E _{AR} Note3	12.3	mJ
Channel dissipation	Pch Note2	25	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW \leq 10 μ s, duty cycle \leq 1%

2. Value at Tc = 25°C

3. Value at Tch = 25°C, Rg \geq 50 Ω

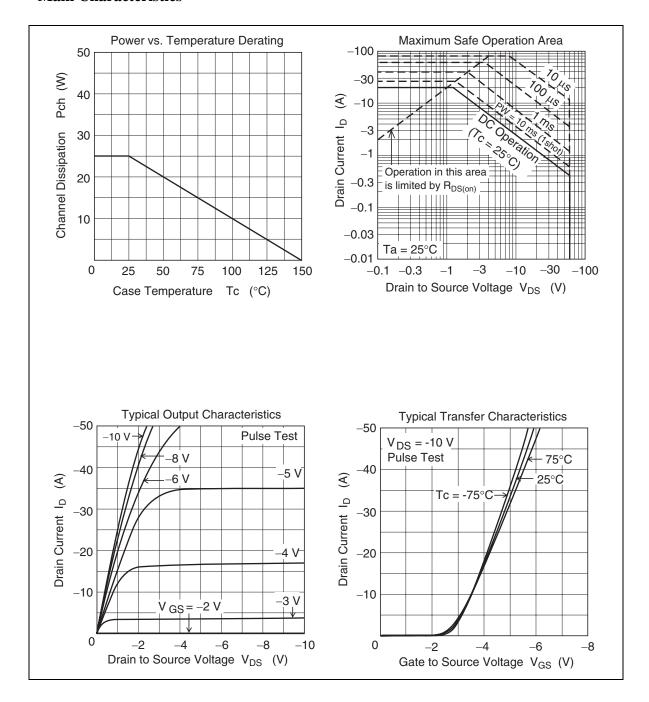
Electrical Characteristics

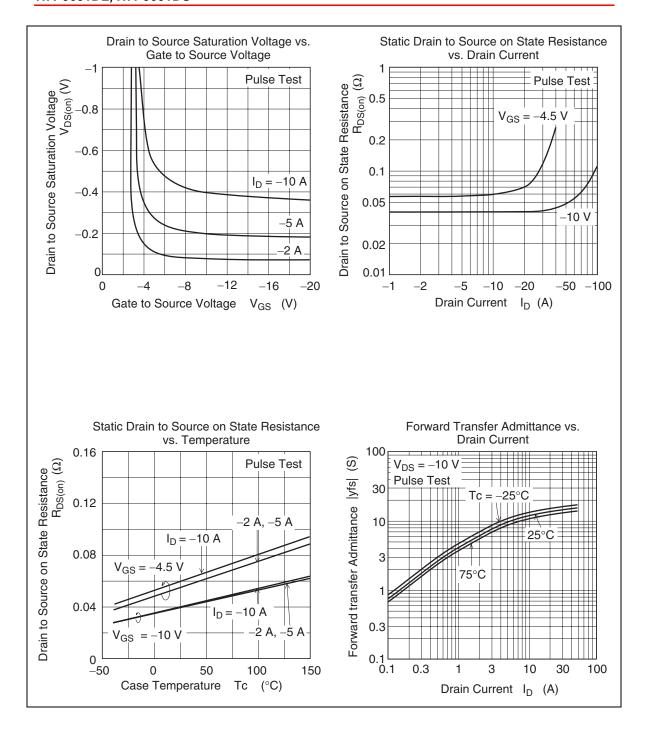
 $(Ta = 25^{\circ}C)$

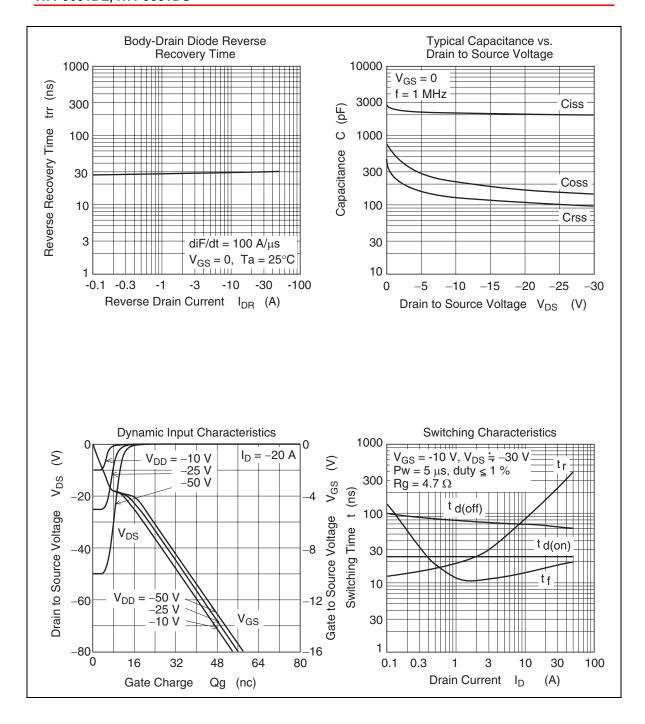
Item	Symbol	Min	Тур	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	_	_	V	$I_D = -10$ mA, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	_	_	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	I _{GSS}	_	_	±10	μΑ	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	-10	μΑ	V _{DS} = -60 V, V _{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	_	-2.5	V	$I_D = -1 \text{ mA}, V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	R _{DS(on)}	_	40	50	mΩ	$I_D = -10 \text{ A}, V_{GS} = -10 \text{ V}^{\text{Note1}}$
		_	60	85	mΩ	$I_D = -5 \text{ A}, V_{GS} = -4.5 \text{ V}^{\text{Note1}}$
Forward transfer admittance	y _{fs}	7.2	12	_	S	$I_D = -10 \text{ A}, V_{DS} = -10 \text{ V}^{\text{Note1}}$
Input capacitance	Ciss	_	2200	_	pF	$V_{DS} = -10 \text{ V}$ $V_{GS} = 0$ $L_{T} = 1 \text{ MHz}$
Output capacitance	Coss	_	220	_	pF	
Reverse transfer capacitance	Crss	_	130	_	pF	
Total gate charge	Qg	_	37	_	nC	$V_{DD} = -25 \text{ V}$ $V_{GS} = -10 \text{ V}$ $L_{D} = -20 \text{ A}$
Gate to source charge	Qgs	_	6.5	_	nC	
Gate to drain charge	Qgd	_	8	_	nC	
Turn-on delay time	t _{d(on)}	_	25	_	ns	$V_{GS} = -10 \text{ V}, I_{D} = -10 \text{ A}$ $= R_{L} = 3.0 \Omega$ $= Rg = 4.7 \Omega$
Rise time	t _r	_	85	_	ns	
Turn-off delay time	t _{d(off)}	_	70	_	ns	
Fall time	t _f	_	15	_	ns	
Body-drain diode forward voltage	V_{DF}	_	0.95	_	V	$I_F = -20 \text{ A}, V_{GS} = 0$
Body-drain diode reverse recovery time	t _{rr}	_	30	_	ns	$I_F = -20 \text{ A}, V_{GS} = 0$ diF/dt = 100 A/ μ s

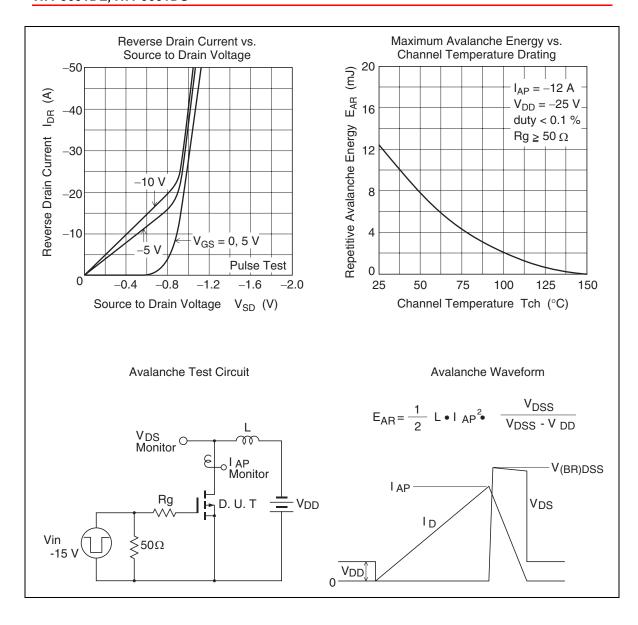
Note: 1. Pulse test

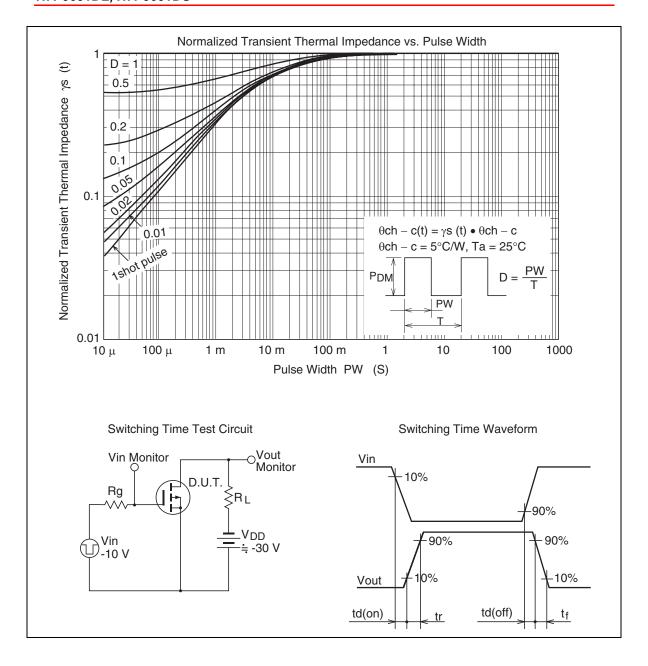
Main Characteristics



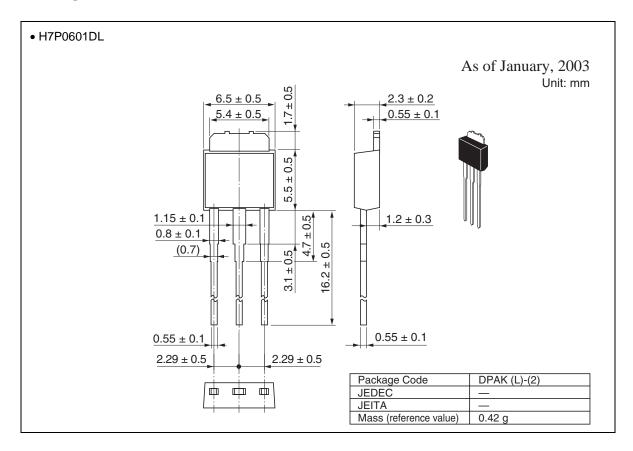


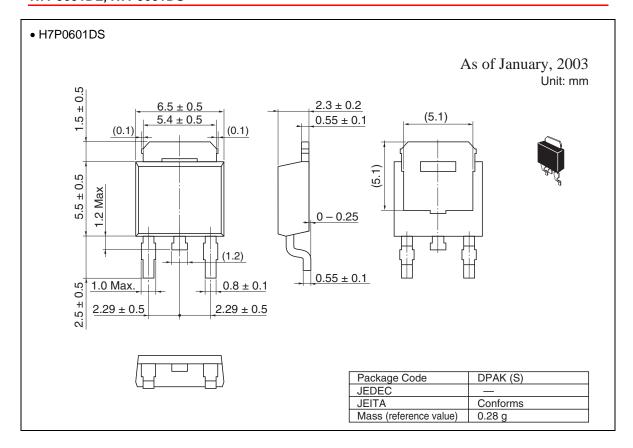






Package Dimensions





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