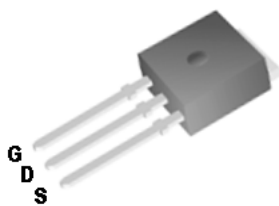


P0420AI / P0420AD

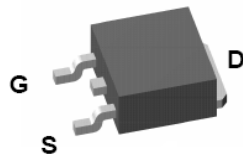
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

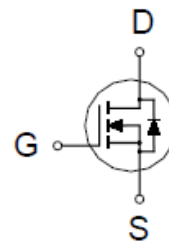
$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
200V	$0.7\Omega @ V_{GS} = 10V$	4A



TO-251



TO-252



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	4	A
	$T_C = 100\text{ }^\circ\text{C}$		3	
Pulsed Drain Current ^{1, 2}		I_{DM}	16	
Avalanche Current		I_{AS}	4	
Avalanche Energy	$L = 10\text{mH}$	E_{AS}	75	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	69	W
	$T_C = 100\text{ }^\circ\text{C}$		27	
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1.8	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Limited by package.

P0420AI / P0420AD

N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

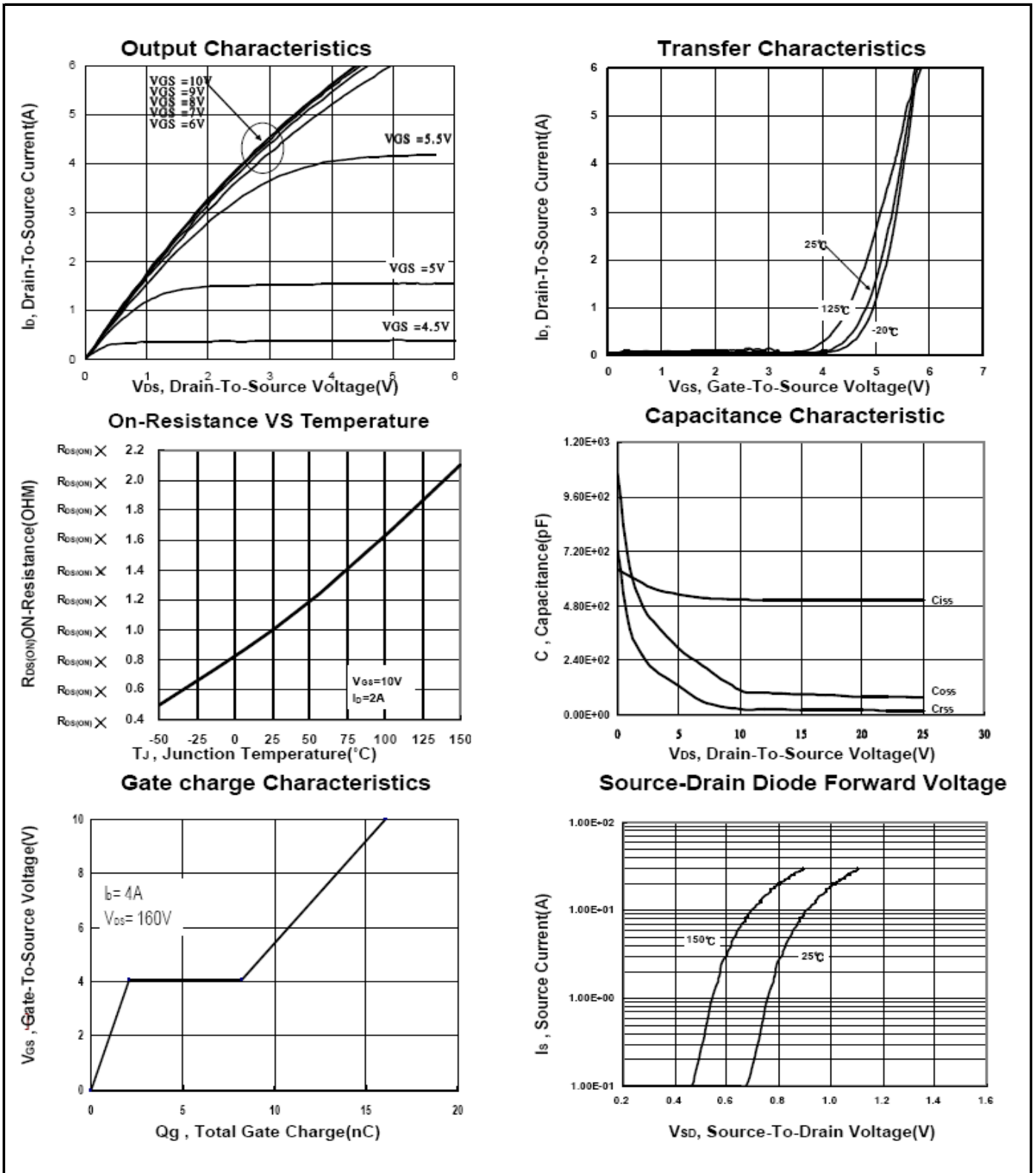
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	200			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3	4	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 200V, V _{GS} = 0V			1	μA
		V _{DS} = 160V, V _{GS} = 0V, T _J = 125 °C			10	
Drain-Source On-State	R _{DS(ON)}	V _{GS} = 10V, I _D = 2A		0.5	0.7	Ω
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 4A		10		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		504		pF
Output Capacitance	C _{oss}			77		
Reverse Transfer Capacitance	C _{rss}			20		
Total Gate Charge ²	Q _g	V _{DS} = 160V, I _D = 4A, V _{GS} = 10V		16		nC
Gate-Source Charge ²	Q _{gs}			2		
Gate-Drain Charge ²	Q _{gd}			6		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 100V, I _D ≅ 4A, V _{GS} = 10V		23		nS
Rise Time ²	t _r			33		
Turn-Off Delay Time ²	t _{d(off)}			45		
Fall Time ²	t _f			16		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				4	A
Forward Voltage ¹	V _{SD}	I _F = 4A, V _{GS} = 0V			1.6	V
Reverse Recovery Time	t _{rr}	I _F = 4A, di _F /dt = 100A / μS		108		nS
Reverse Recovery Charge	Q _{rr}				382	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

P0420AI / P0420AD

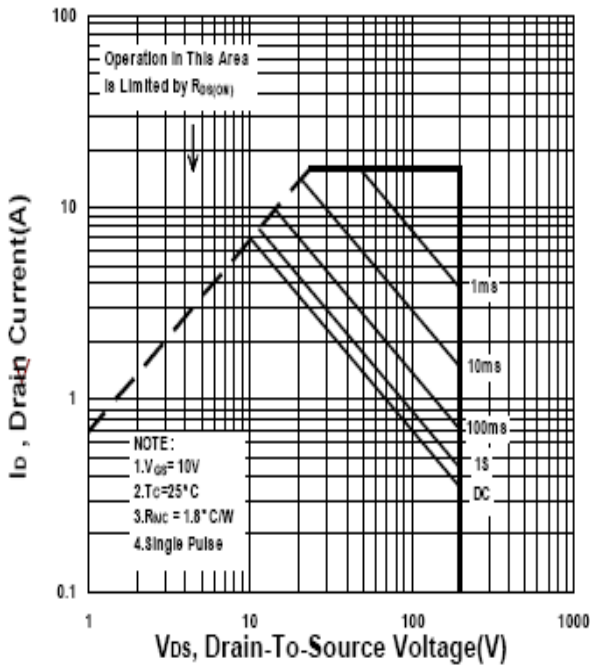
N-Channel Enhancement Mode MOSFET



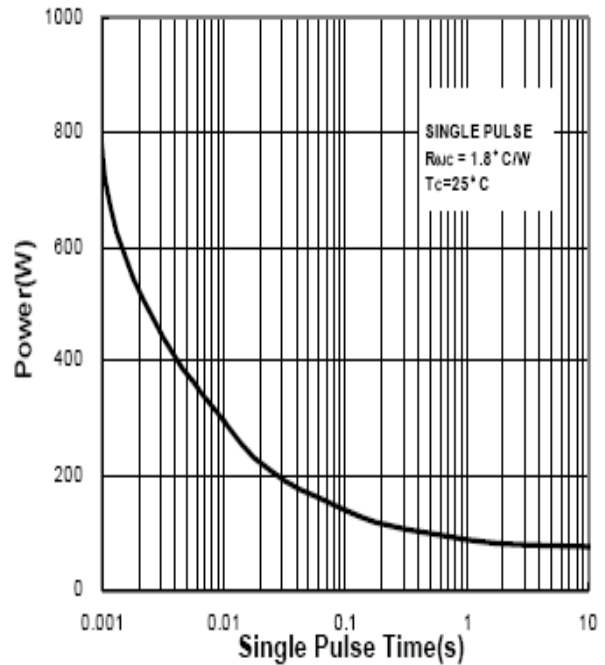
P0420AI / P0420AD

N-Channel Enhancement Mode MOSFET

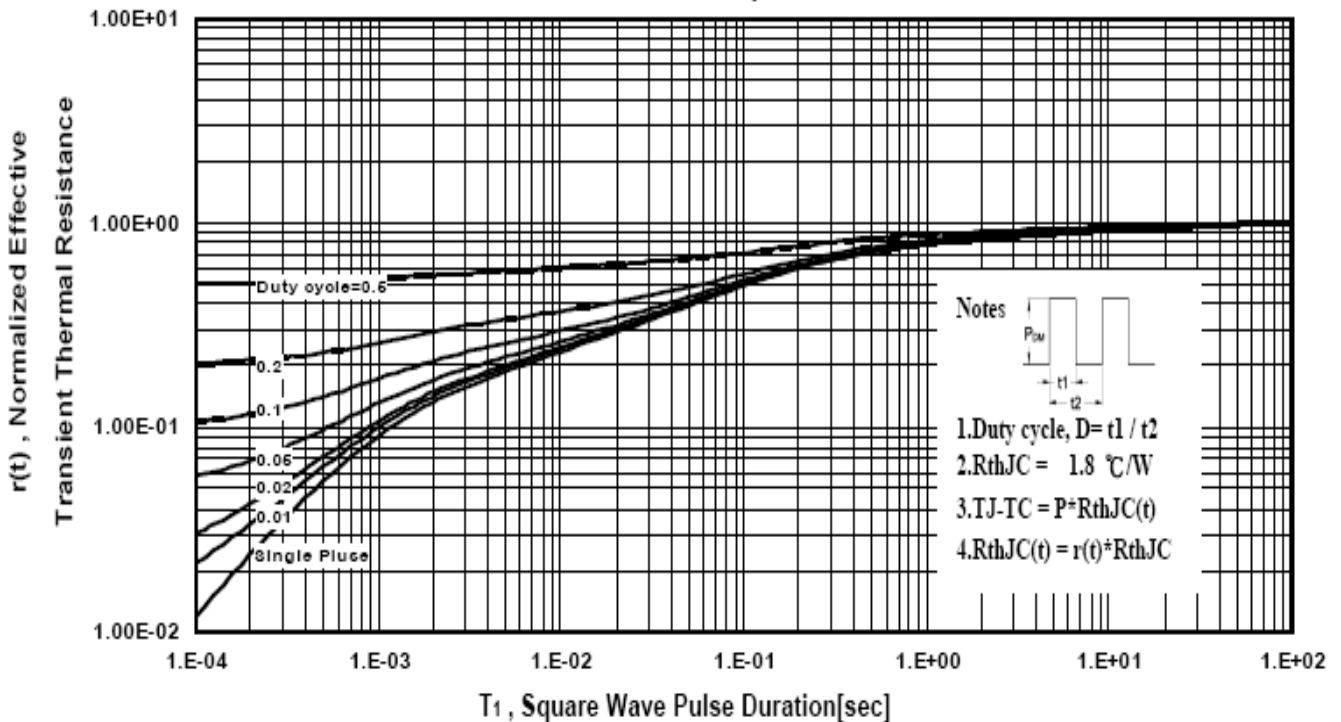
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



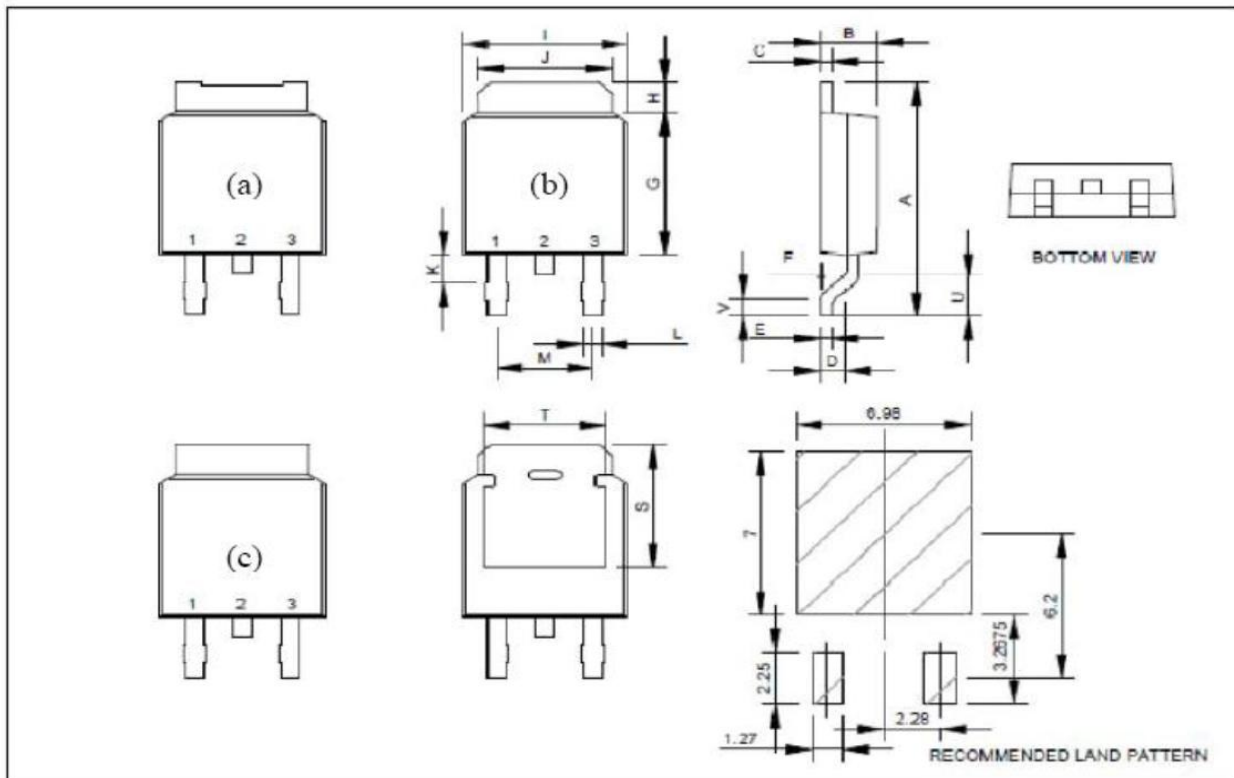
P0420AI / P0420AD

N-Channel Enhancement Mode MOSFET

Package Dimension

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	10	10.41	J	4.8		5.64
B	2.1	2.2	2.5	K	0.15		1.49
C	0.4	0.5	0.61	L	0.4	0.76	0.91
D	0.82	1.2	1.5	M	4.2	4.58	5
E	0.35	0.5	0.65	S	4.57	5.1	5.52
F	0		0.2	T	3.81	4.75	5.24
G	5.3	6.1	6.3	U	1.4		1.78
H	0.5		1.7	V	0.55	1.25	1.7
I	6.3	6.5	6.8				



P0420AI / P0420AD
N-Channel Enhancement Mode MOSFET

Package Dimension

TO-251 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	14	15	17.14	H	0.89		1.7
B	2.1	2.3	2.5	I	6.3		6.8
C	0.4	0.5	0.6	J	4.8		5.5
D	0.35	0.5	0.65	K	0.5	0.84	1.14
E	0.9	1.1	1.5	L	0.4	0.76	0.912
F	7		9.65	M		2.3	
G	5.3		6.22	N	1.4	2.16	2.23

