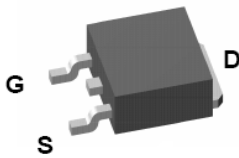


P3506DD

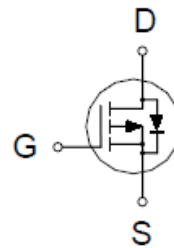
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-60V	35mΩ @ $V_{GS} = -10V$	-26A



TO-252



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	-26	A
	$T_C = 100\text{ °C}$		-16	
Pulsed Drain Current ¹		I_{DM}	-100	
Avalanche Current		I_{AS}	-39	
Avalanche Energy ²	$L = 0.1\text{mH}$	E_{AS}	77	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	42	W
	$T_C = 100\text{ °C}$		17	
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3	°C / W
Junction-to-Ambient	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

² $V_{DD} = -30V$ Starting $T_J = 25\text{ °C}$.

P3506DD

P-Channel Enhancement Mode MOSFET

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

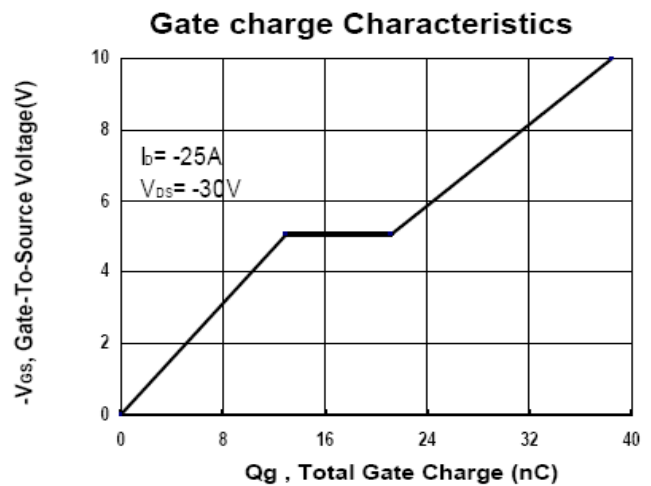
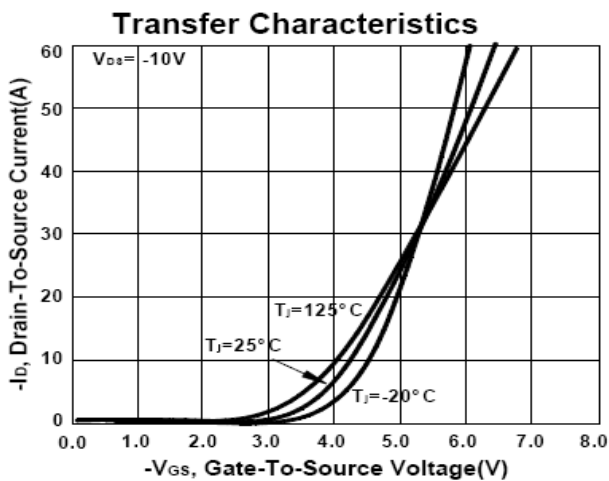
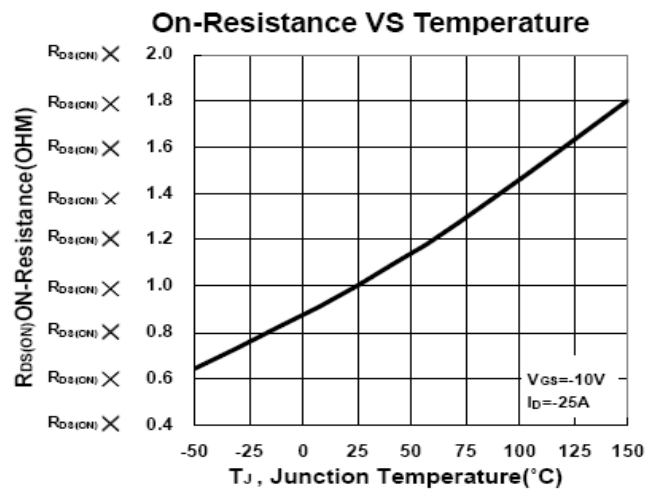
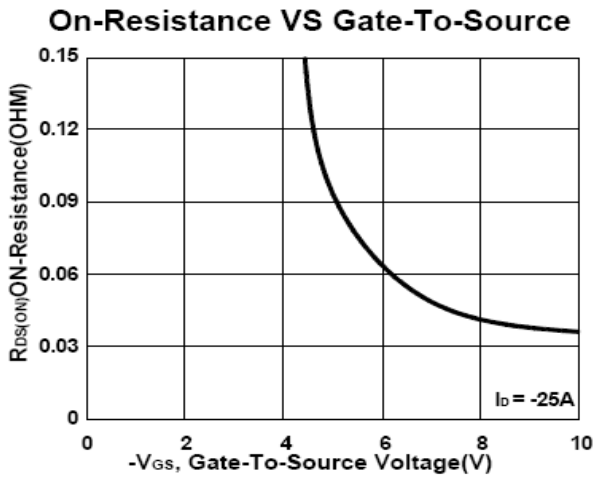
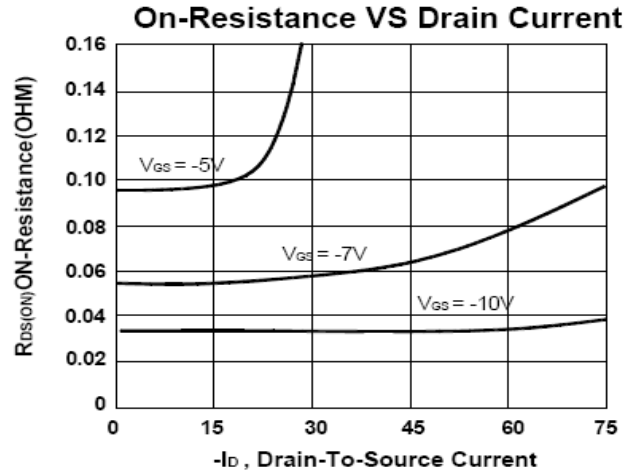
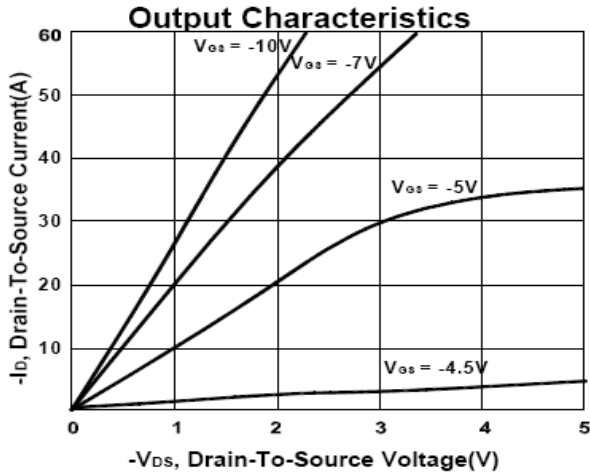
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-2.0	-2.7	-4.0	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	μA
		V _{DS} = -40V, V _{GS} = 0V, T _J = 55 °C			-10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = -5V, V _{GS} = -10V	-100			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -7V, I _D = -20A		32	55	mΩ
		V _{GS} = -10V, I _D = -25A		29	35	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -25A		15		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -30V, f = 1MHz		2550		pF
Output Capacitance	C _{oss}			241		
Reverse Transfer Capacitance	C _{rss}			140		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		4.85		Ω
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = -10V, I _D = -25A		39		nC
Gate-Source Charge ²	Q _{gs}			13		
Gate-Drain Charge ²	Q _{gd}			8		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -30V, R _L = 1Ω I _D ≅ -20A, V _{GS} = -10V, R _{GEN} = 6Ω		30		nS
Rise Time ²	t _r			90		
Turn-Off Delay Time ²	t _{d(off)}			70		
Fall Time ²	t _f			15		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				-26	A
Forward Voltage ¹	V _{SD}	I _F = -25A, V _{GS} = 0V			-1.3	V
Reverse Recovery Time	t _{rr}	I _F = -25A, dI _F /dt = 100A / μS		30		nS
Reverse Recovery Charge	Q _{rr}			100		nC

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

²Independent of operating temperature.

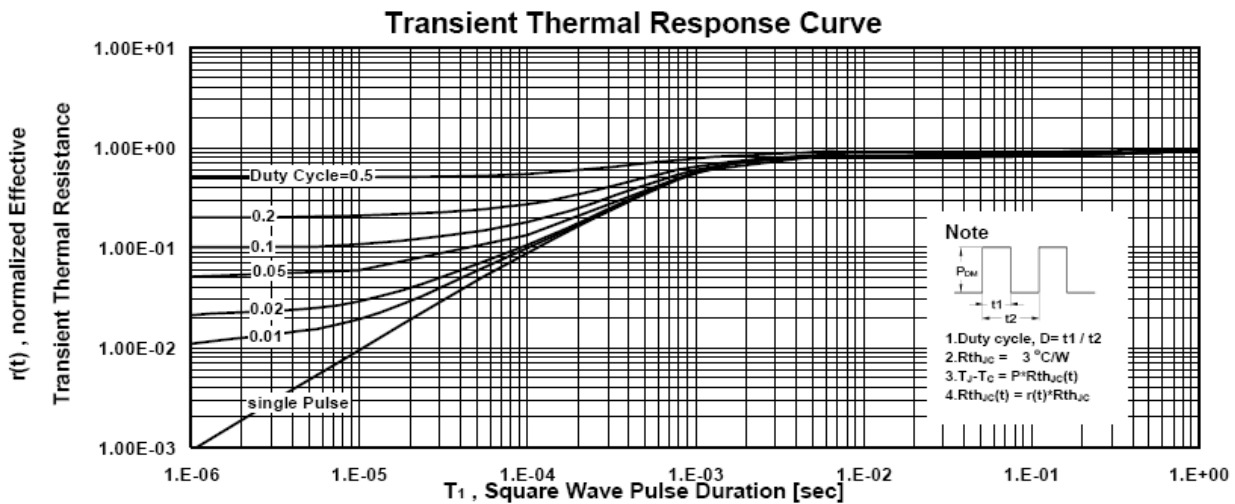
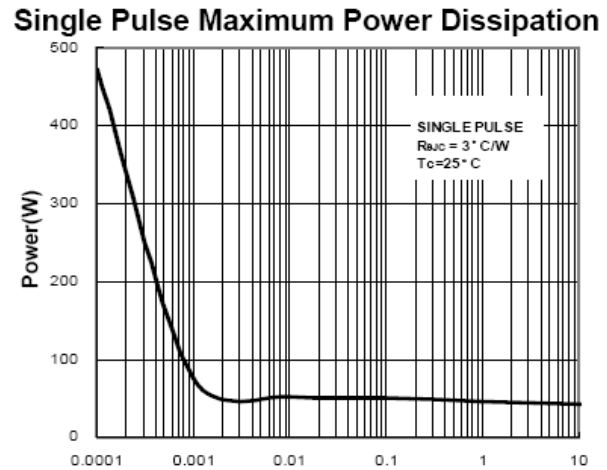
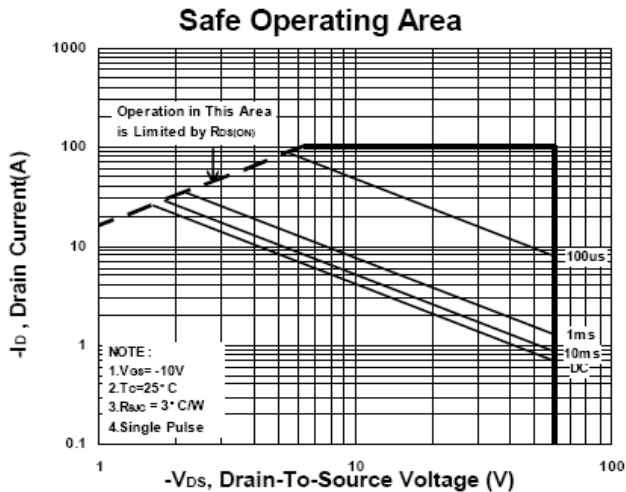
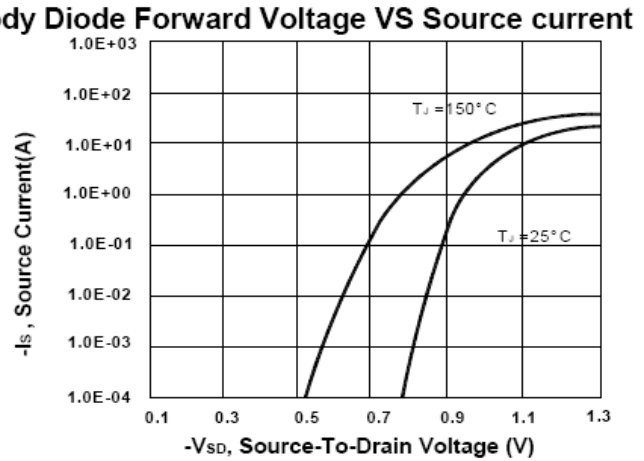
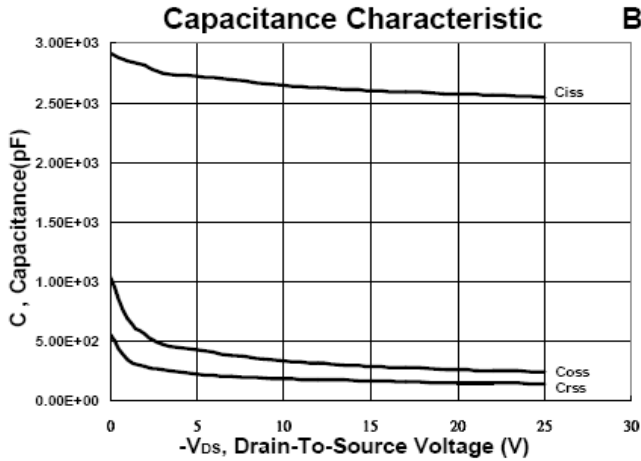
P3506DD

P-Channel Enhancement Mode MOSFET



P3506DD

P-Channel Enhancement Mode MOSFET



P3506DD

P-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				

