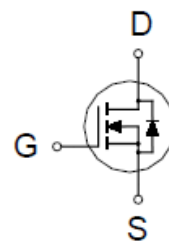
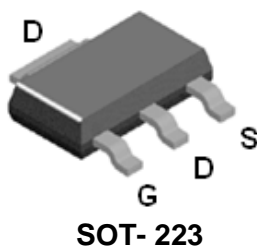


PF610BL

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	0.7Ω @ $V_{GS} = 10V$	0.9A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	0.9	A
	$T_A = 70\text{ °C}$		0.5	
Pulsed Drain Current ¹		I_{DM}	5.4	
Avalanche Current		I_{AS}	3.8	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	7.2	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.3	W
	$T_A = 70\text{ °C}$		0.5	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		95	°C / W

¹Pulse width limited by maximum junction temperature.

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

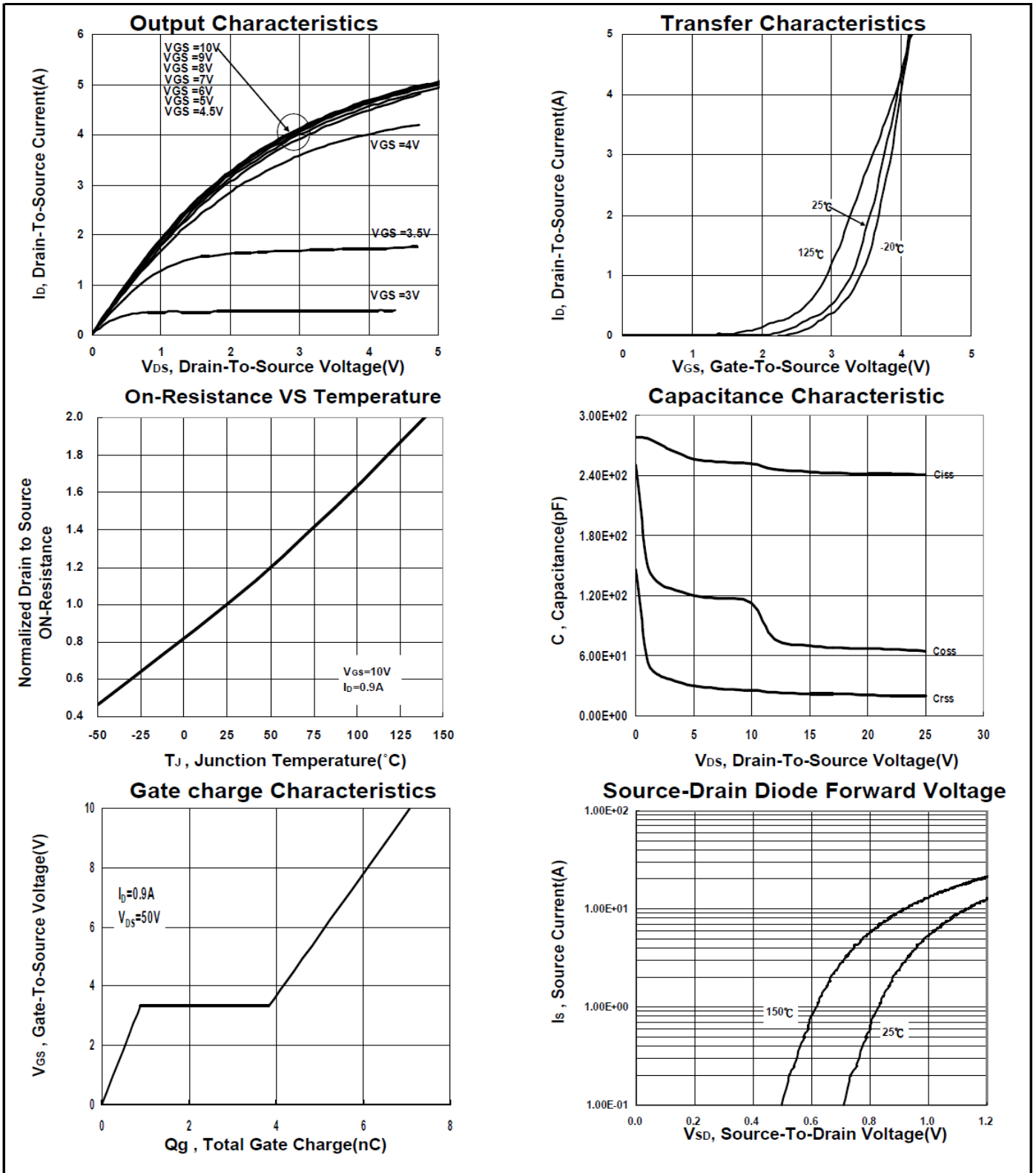
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.8	3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 80V, V _{GS} = 0V			1	μA
		V _{DS} = 80V, V _{GS} = 0V, T _J = 125 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 10V	5.4			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 0.5A		0.52	0.9	Ω
		V _{GS} = 10V, I _D = 0.9A		0.48	0.7	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 0.9A		2		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		246		pF
Output Capacitance	C _{oss}			65		
Reverse Transfer Capacitance	C _{rss}			20		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		2.1		Ω
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} I _D = 0.9A, V _{GS} = 10V		7.2		nC
Gate-Source Charge ²	Q _{gs}			1		
Gate-Drain Charge ²	Q _{gd}			3		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 50V, I _D ≅ 0.9A, V _{GS} = 10V, R _{GS} = 4.7Ω		8		nS
Rise Time ²	t _r			11		
Turn-Off Delay Time ²	t _{d(off)}			26		
Fall Time ²	t _f			13.5		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				0.9	A
Forward Voltage ¹	V _{SD}	I _F = 0.9A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 2 A, dI/dt = 100A / μS		32		nS
Reverse Recovery Charge	Q _{rr}				35	

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

²Independent of operating temperature.

PF610BL

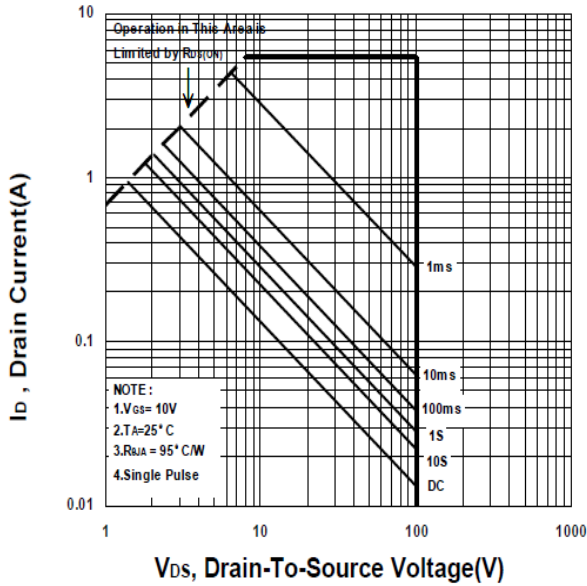
N-Channel Enhancement Mode MOSFET



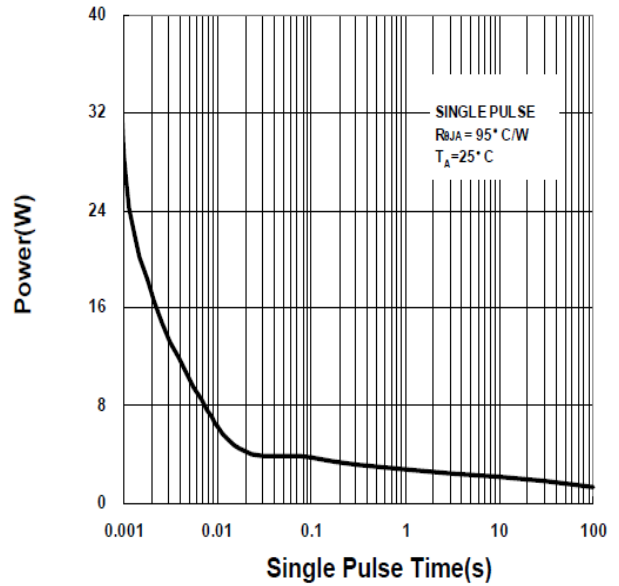
PF610BL

N-Channel Enhancement Mode MOSFET

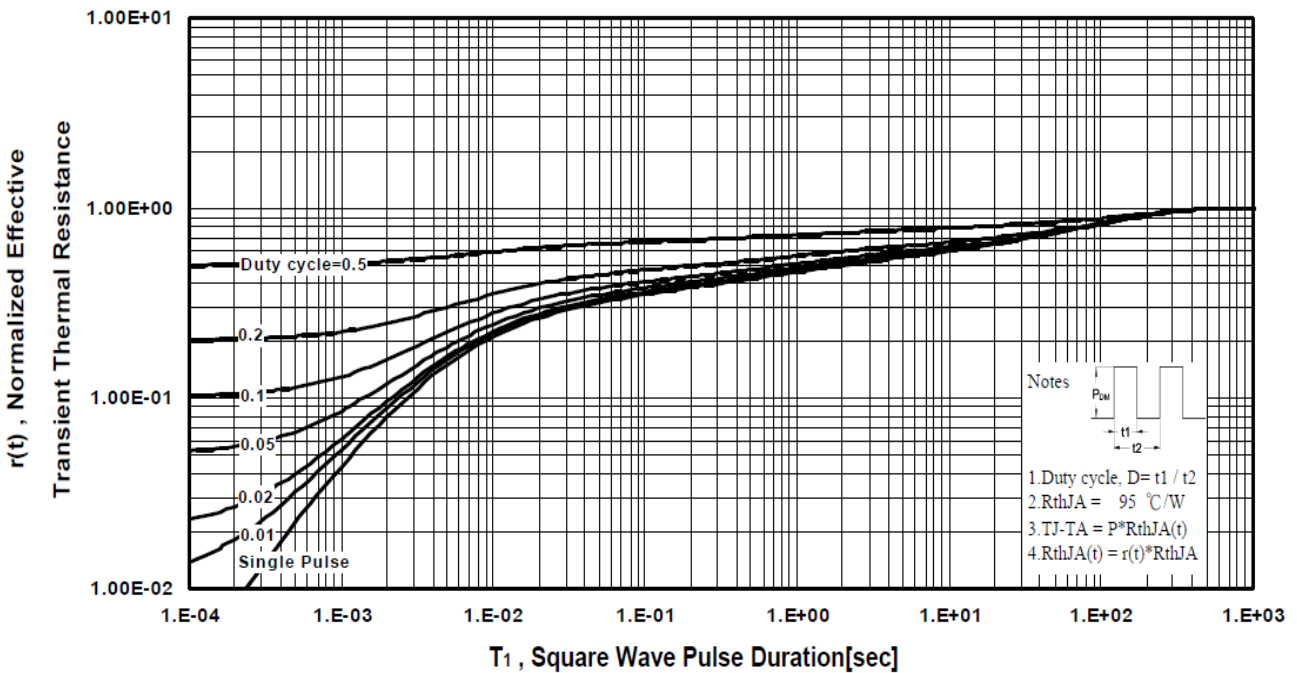
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



PF610BL
N-Channel Enhancement Mode MOSFET

SOT-223 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.60	0.76	0.84	H	3.30	3.50	3.70
B	6.70	7.00	7.30	I	0.50	1.00	1.20
C	2.85	3.00	3.10	J	0.23	0.3	0.4
D	2.25	2.30	2.35	K	0°		10°
E	4.35	4.60	4.85	L	0	0.1	0.2
F	1.40	1.60	1.80	M			
G	6.30	6.50	6.80	N			

