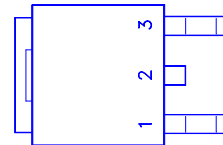
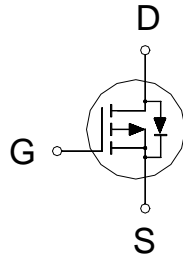


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20	115m	-10A



1 :GATE
2 :DRAIN
3 :SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	-10	A
	$T_C = 70\text{ }^\circ\text{C}$		-6.2	
Pulsed Drain Current ¹		I_{DM}	-24	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	25	W
	$T_C = 70\text{ }^\circ\text{C}$		9.6	
Operating 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	$R_{\theta JC}$		5	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		110	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-0.45	-0.8	-1.2	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -13.2V, V_{GS} = 0V, T_j = 125\text{ }^\circ\text{C}$			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -4.5V$	-24			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -2.5V, I_D = -2A$		124	180	m
		$V_{GS} = -4.5V, I_D = -3A$		93	115	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -5V, I_D = -3A$		4.4		S

DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -6V, f = 1MHz$		430		pF
Output Capacitance	C_{oss}			235		
Reverse Transfer Capacitance	C_{rss}			95		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -4.5V,$ $I_D = -3A$		7.6	10	nC
Gate-Source Charge ²	Q_{gs}			3.2		
Gate-Drain Charge ²	Q_{gd}			2		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = -10V$ $I_D \cong -1A, V_{GS} = -5V, R_G = 6$			25	nS
Rise Time ²	t_r				60	
Turn-Off Delay Time ²	$t_{d(off)}$				70	
Fall Time ²	t_f				60	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_C = 25^\circ C$)						
Continuous Current	I_S				-10	A
Pulsed Current ³	I_{SM}				-24	
Forward Voltage ¹	V_{SD}	$I_F = -10A, V_{GS} = 0V$			-1.2	V

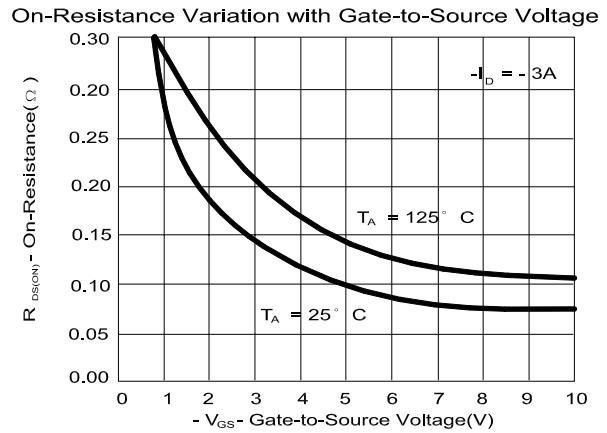
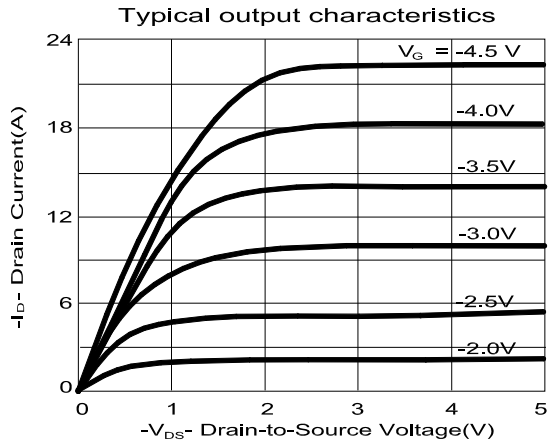
¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

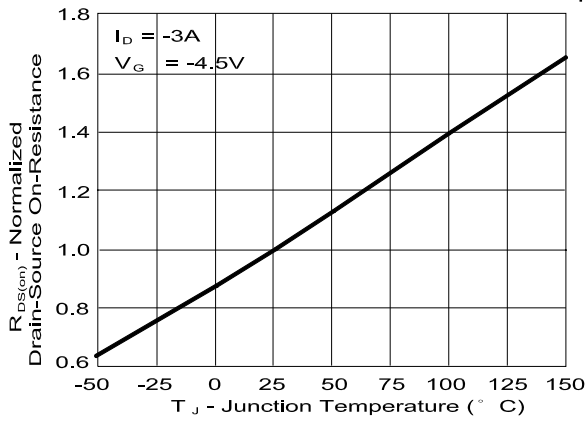
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH PA102FDG, DATE CODE or LOT #

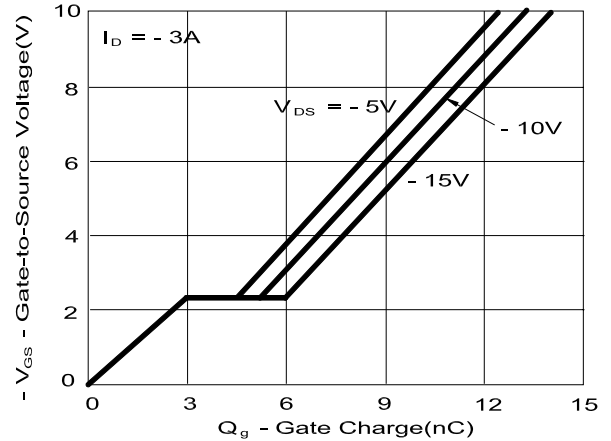
Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.



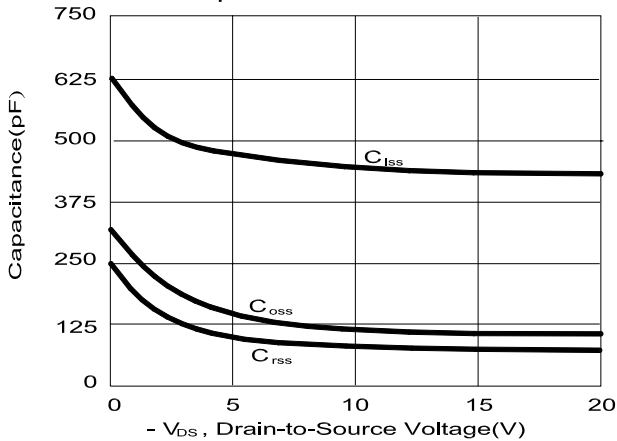
Normalized on-Resistance v.s. Junction Temperature



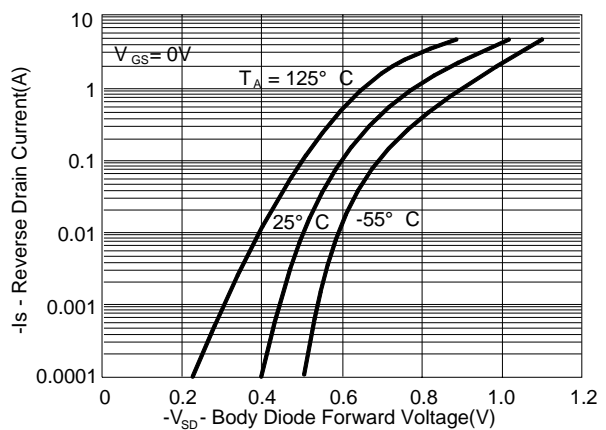
Gate Charge Characteristics

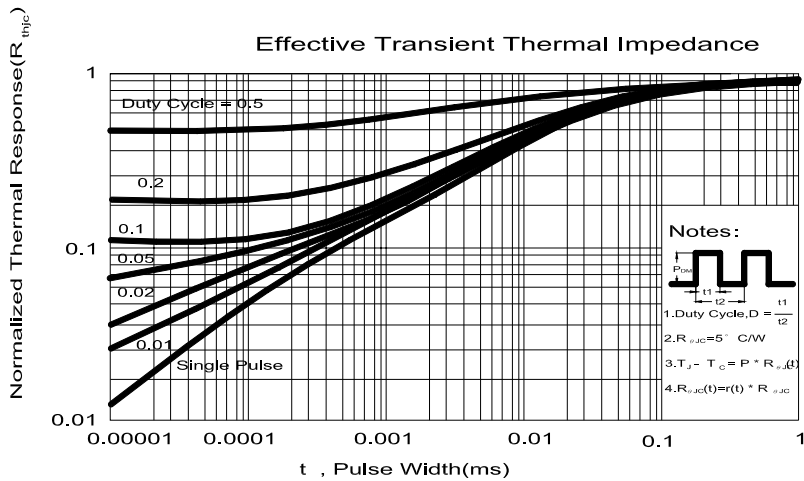
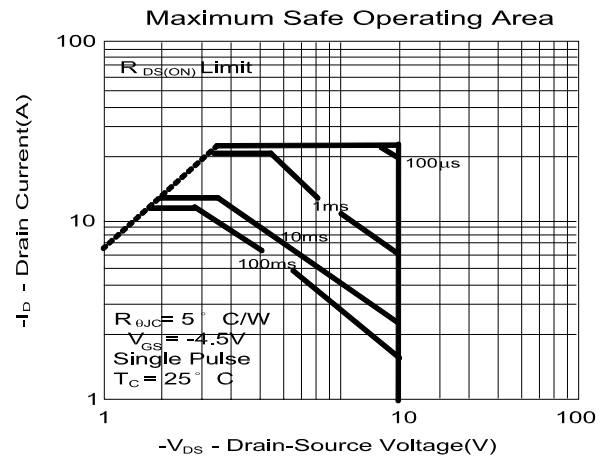
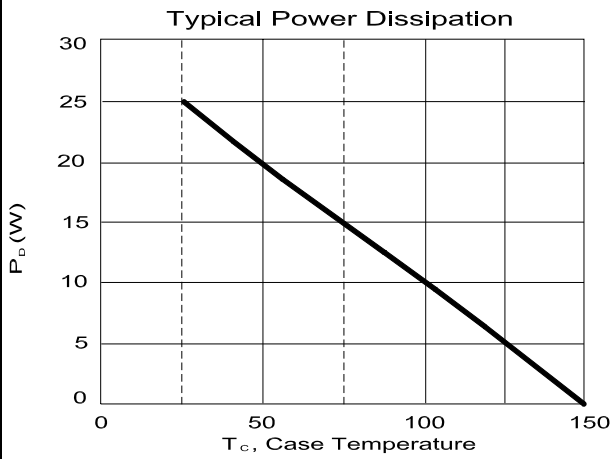
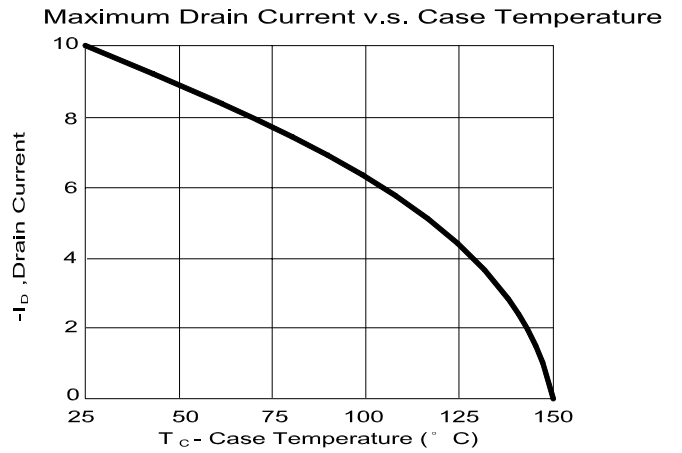
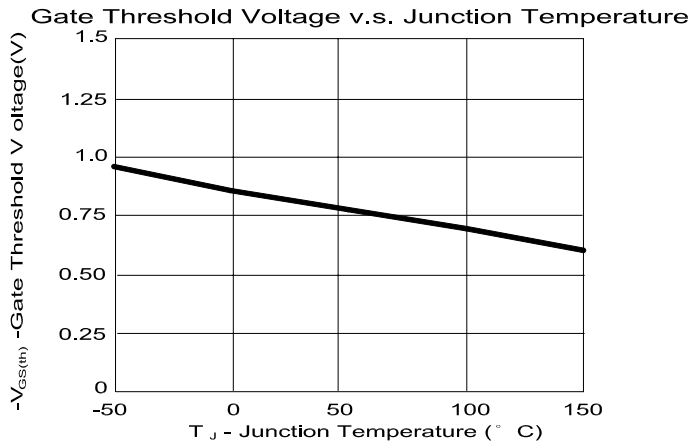


Capacitance Characteristics



Body Diode Forward Voltage Variation with Source Current and Temperature





TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.35		10.4	H	0.89		2.03
B	2.2		2.4	I	6.35		6.80
C	0.45		0.6	J	5.2		5.5
D	0.89		1.5	K	0.6		1
E	0.45		0.69	L	0.5		0.9
F	0.03		0.23	M	3.96	4.57	5.18
G	5.2		6.2	N			

