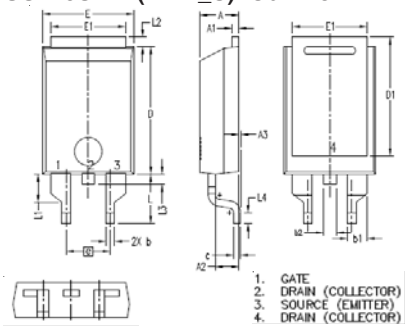
Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.
g_{fs}	V_{DS} = 20V, I_D = 0.5 • I_{D25}, Note 1	5	9	S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		5400	pF
C_{oss}			290	pF
C_{rss}			40	pF
R_{Gi}	Gate input resistance		1.5	Ω
$t_{d(on)}$	**Resistive Switching Times**		34	ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		25	ns
$t_{d(off)}$	R_G = 2Ω (External)		62	ns
t_f			34	ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		103	nC
Q_{gs}			29	nC
Q_{gd}			41	nC
R_{thJC}				0.23 °C/W
R_{thCS}	(TO-247, PLUS 220)		0.21	°C/W

Source-Drain Diode (T_J = 25°C unless otherwise specified)		Characteristic Values Min.	Typ.	Max.
I_S	V_{GS} = 0V			12 A
I_{SM}	Repetitive, pulse width limited by T_{JM}			48 A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1			1.5 V
t_{rr}	I_F = 6A, -di/dt = 100A/μs			300 ns
Q_{RM}	V_R = 100V, V_{GS} = 0V		0.5	μC
I_{RM}			6	A

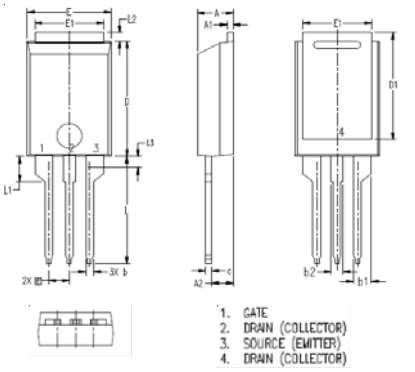
Note 1: Pulse test, t ≤ 300μs; duty cycle, d ≤ 2%.

PLUS220SMD (IXFV_S) Outline



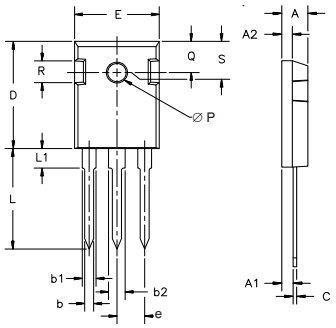
SYM	INCHES MIN	INCHES MAX	MILLIMETER MIN	MILLIMETER MAX
A	.169	.185	4.30	4.70
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
A3	.000	.010	0.00	0.25
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.200BSC		5.08 BSC	
L	.209	.228	5.30	5.80
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.047	.059	1.20	1.50
L4	.039	.059	1.00	1.50

PLUS220 (IXFV) Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETER MIN	MILLIMETER MAX
A	.169	.185	4.30	4.70
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.100 BSC		2.54 BSC	
L	.512	.551	13.00	14.00
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.047	.059	1.20	1.50

TO-247 (IXFH) Outline



Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	4.7	5.3	.185	.209
A_1	2.2	2.54	.087	.102
A_2	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b_1	1.65	2.13	.065	.084
b_2	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
∅P	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	242	BSC

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or moreof the following U.S. patents: 4,835,592 4,850,072 4,881,106 4,931,844 5,017,508 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,381,025 5,486,715 6,162,665 6,259,123 B1 6,306,728 B1 6,404,065 B1 6,534,343 6,583,505 6,683,344 6,710,405 B2 6,710,463 6,727,585 6,759,692 6,771,478 B2 7,005,734 B2 7,063,975 B2 7,071,537 7,157,338B2

Fig. 1. Output Characteristics @ 25ºC

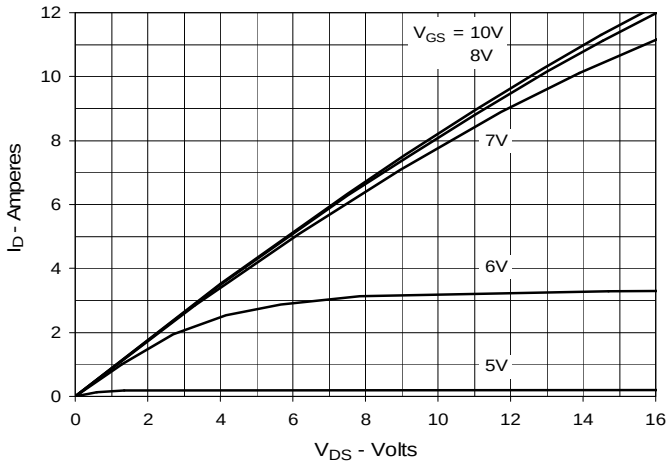


Fig. 2. Extended Output Characteristics @ 25ºC

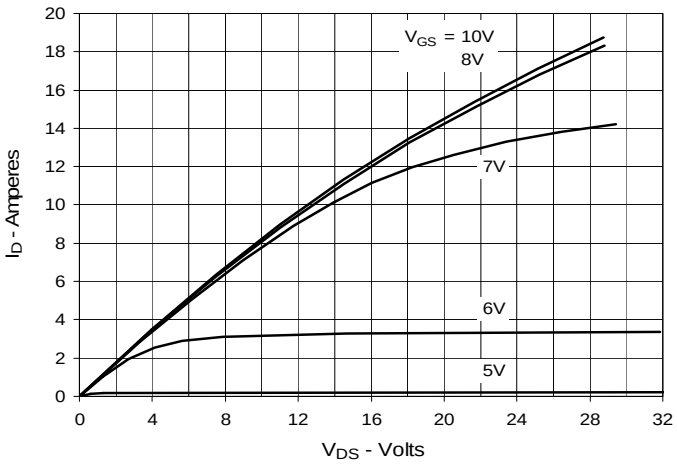


Fig. 3. Output Characteristics @ 125ºC

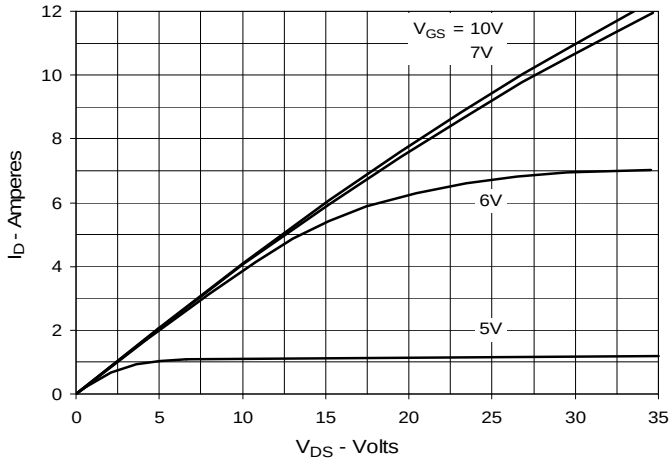


Fig. 4. $R_{DS(on)}$ Normalized to I_D = 6A Value vs. Junction Temperature

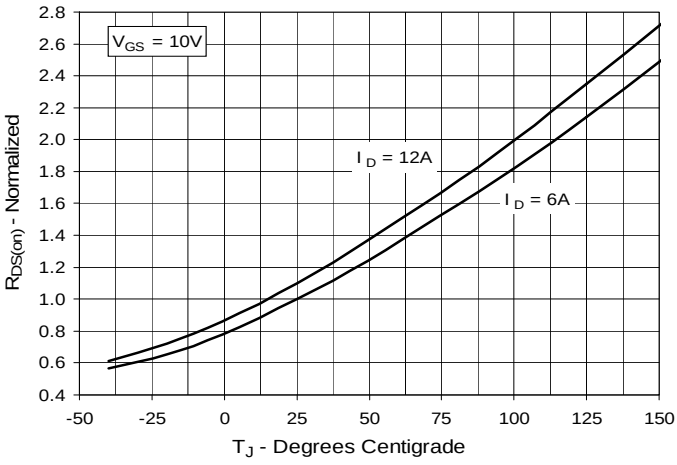


Fig. 5. $R_{DS(on)}$ Normalized to I_D = 6A Value vs. Drain Current

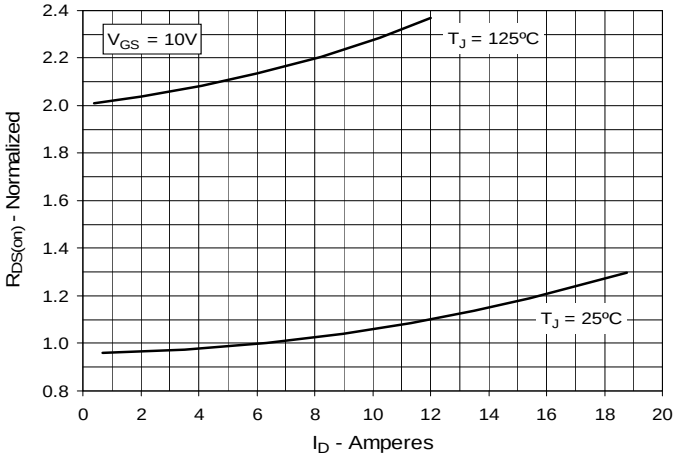


Fig. 6. Maximum Drain Current vs. Case Temperature

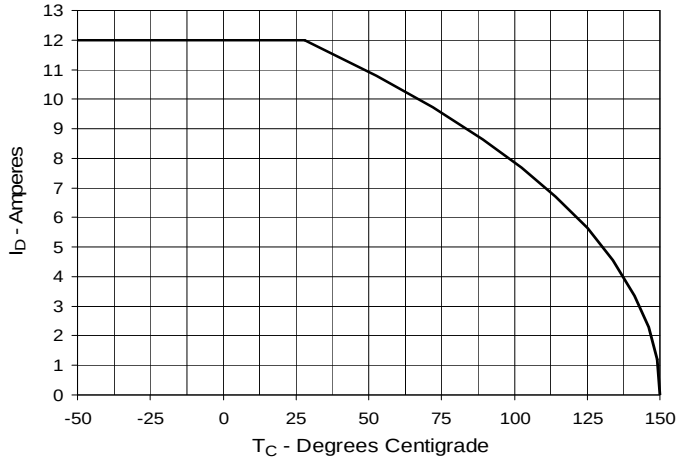


Fig. 7. Input Admittance

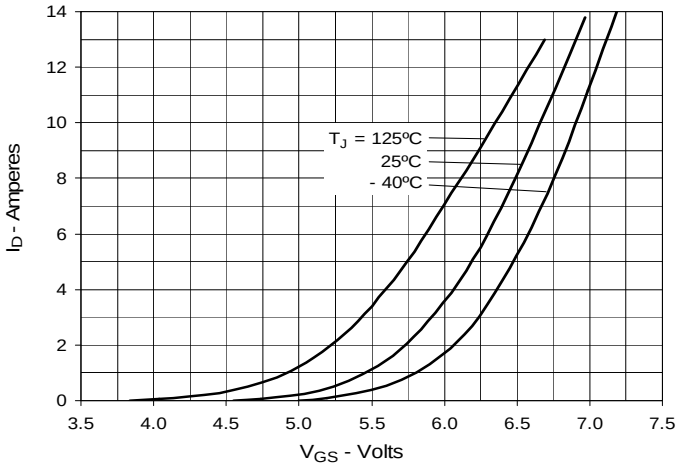


Fig. 8. Transconductance

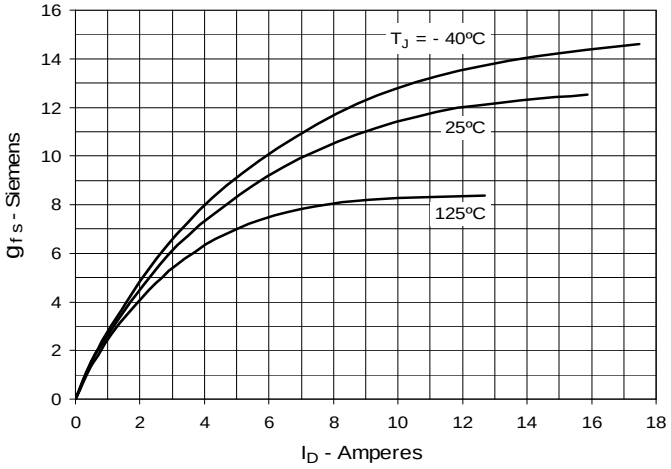


Fig. 9. Forward Voltage Drop of Intrinsic Diode

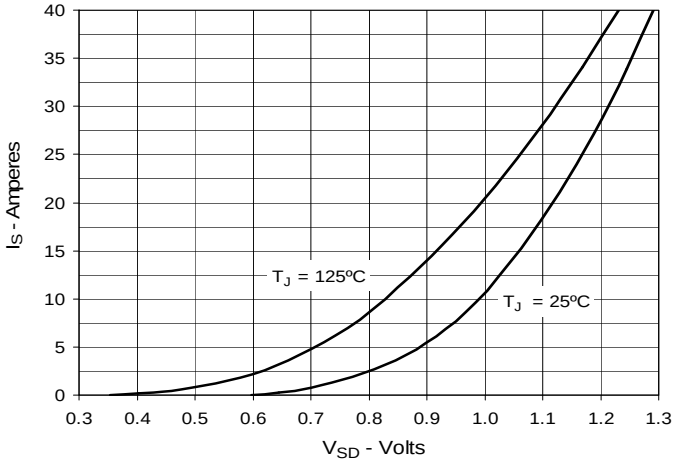


Fig. 10. Gate Charge

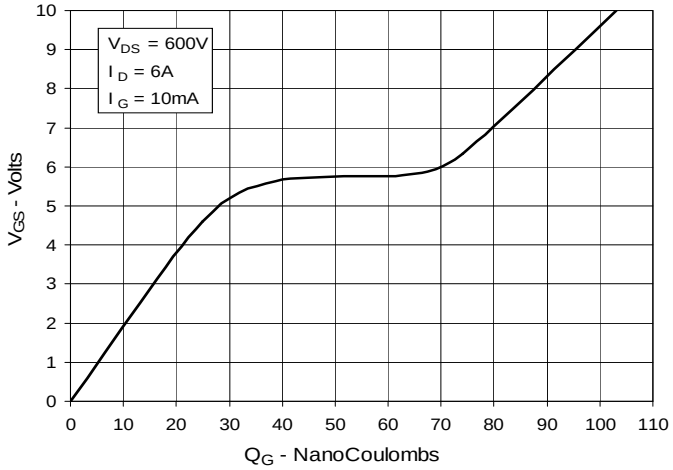


Fig. 11. Capacitance

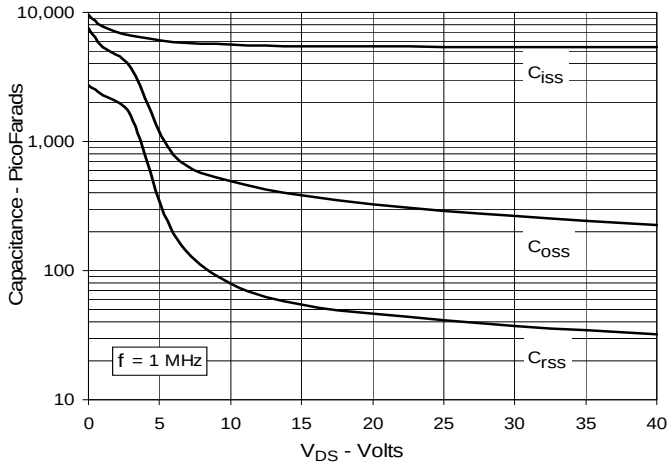
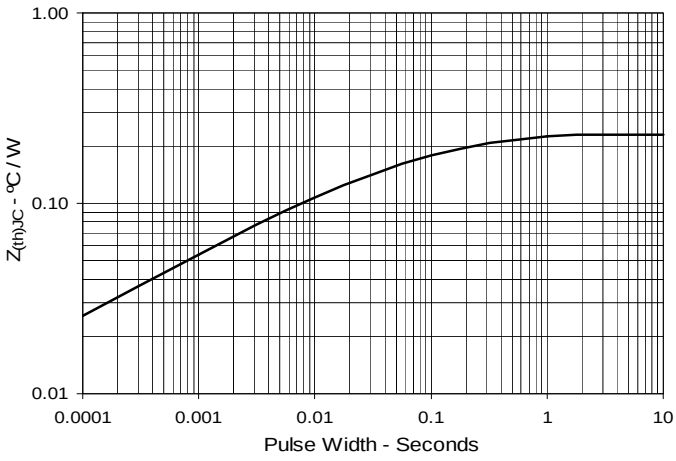


Fig. 12. Maximum Transient Thermal Impedance



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