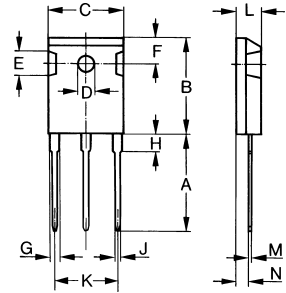


Symbol	Test Conditions	Characteristic Values		
	($T_J = 25^\circ\text{C}$, unless otherwise specified)	Min.	Typ.	Max.
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 0.5 I_{D25}$	42N20		0.060 Ω
		50N20		0.045 Ω
		58N20		0.040 Ω
Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$				
g_{fs}	$V_{DS} = 10\text{ V}$; $I_D = 0.5 I_{D25}$, pulse test	20	32	S
C_{iss}	$V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$		4400	pF
C_{oss}			800	pF
C_{rss}			285	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 0.5 I_{D25}$ $R_G = 1\text{ }\Omega$ (External)		18	ns
t_r			15	ns
$t_{d(off)}$			72	ns
t_f			16	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 0.5 I_{D25}$		190	nC
Q_{gs}			35	nC
Q_{gd}			95	nC
R_{thJC}	(TO-247 and TO-204 Case styles)			0.42 K/W
R_{thCK}			0.25	K/W

Symbol	Test Conditions	Characteristic Values		
	($T_J = 25^\circ\text{C}$, unless otherwise specified)	Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{ V}$	42N20		42 A
		50N20		50 A
		58N20		58 A
I_{SM}	Repetitive; pulse width limited by T_{JM}	42N20		168 A
		50N20		200 A
		58N20		232 A
V_{SD}	$I_F = I_S$, $V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$			1.5 V
t_{rr}	$I_F = 25\text{ A}$, $-di/dt = 100\text{ A}/\mu\text{s}$, $V_R = 100\text{ V}$	$T_J = 25^\circ\text{C}$		200 ns
		$T_J = 125^\circ\text{C}$		300 ns
Q_{RM}		$T_J = 25^\circ\text{C}$	1.5	μC
		$T_J = 125^\circ\text{C}$	2.6	μC
I_{RM}		$T_J = 25^\circ\text{C}$	19	A
		$T_J = 125^\circ\text{C}$	23	A

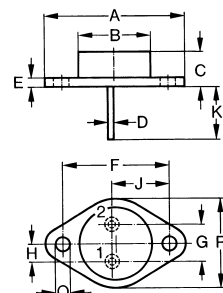
TO-268AA (D ³ PAK)		Dim.	Millimeter	Inches
			Min. Max.	Min. Max.
		A	4.9 5.1	.193 .201
		A ₁	2.7 2.9	.106 .114
		A ₂	.02 .25	.001 .010
		b	1.15 1.45	.045 .057
		b ₂	1.9 2.1	.75 .83
		C	.4 .65	.016 .026
		D	13.80 14.00	.543 .551
		E	15.85 16.05	.624 .632
		E ₁	13.3 13.6	.524 .535
		e	5.45 BSC	.215 BSC
		H	18.70 19.10	.736 .752
		L	2.40 2.70	.094 .106
		L1	1.20 1.40	.047 .055
		L2	1.00 1.15	.039 .045
		L3	0.25 BSC	.010 BSC
		L4	3.80 4.10	.150 .161

TO-247 AD (IXFH) Outline



Dim.	Millimeter	Inches
	Min. Max.	Min. Max.
A	19.81 20.32	0.780 0.800
B	20.80 21.46	0.819 0.845
C	15.75 16.26	0.610 0.640
D	3.55 3.65	0.140 0.144
E	4.32 5.49	0.170 0.216
F	5.4 6.2	0.212 0.244
G	1.65 2.13	0.065 0.084
H	- 4.5	- 0.177
J	1.0 1.4	0.040 0.055
K	10.8 11.0	0.426 0.433
L	4.7 5.3	0.185 0.209
M	0.4 0.8	0.016 0.031
N	1.5 2.49	0.087 0.102

TO-204 AE (IXFM) Outline



Dim.	Millimeter	Inches
	Min. Max.	Min. Max.
A	38.61 39.12	1.520 1.540
B	- 22.22	- 0.875
C	6.40 11.40	0.252 0.449
D	1.45 1.60	0.057 0.063
E	1.52 3.43	0.060 0.135
F	30.15 BSC	1.187 BSC
G	10.67 11.17	0.420 0.440
H	5.21 5.71	0.205 0.225
J	16.64 17.14	0.655 0.675
K	11.18 12.19	0.440 0.480
Q	3.84 4.19	0.151 0.165
R	25.16 26.66	0.991 1.050

Min. Recommended Footprint

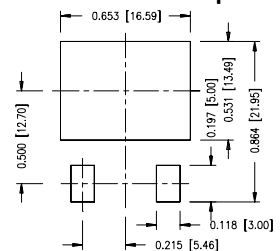


Fig. 1 Output Characteristics

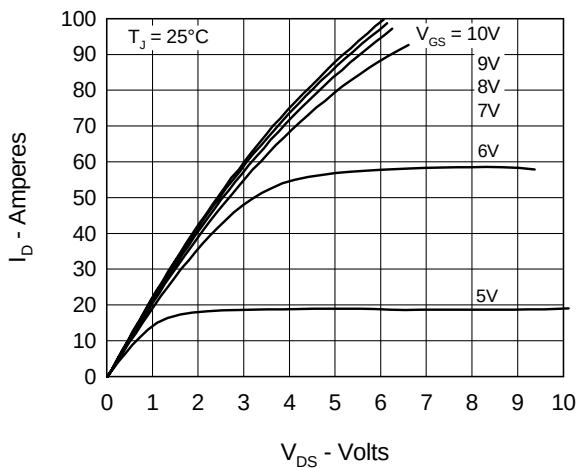


Fig. 2 Input Admittance

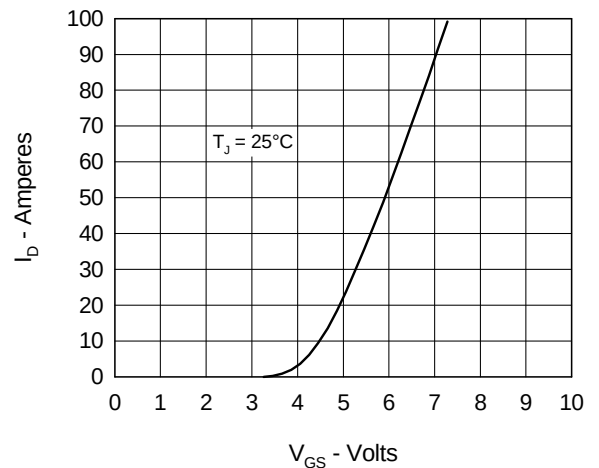
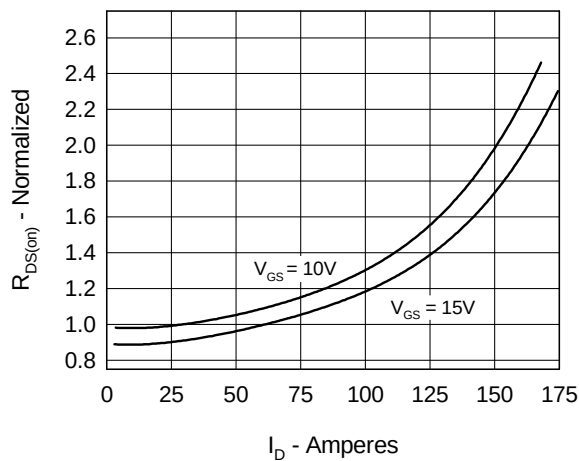

Fig. 3 $R_{DS(on)}$ vs. Drain Current


Fig. 4 Temperature Dependence of Drain to Source Resistance

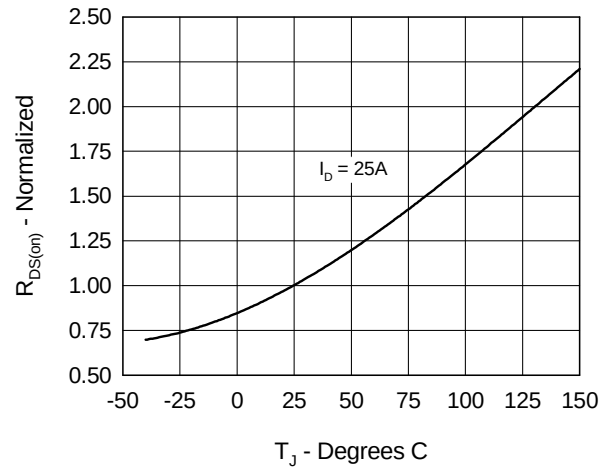


Fig. 5 Drain Current vs. Case Temperature

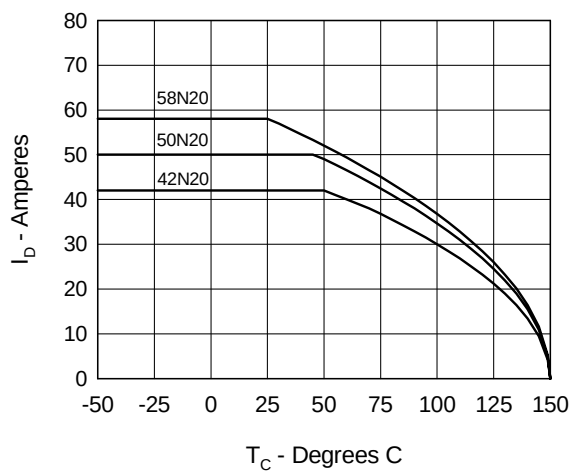


Fig. 6 Temperature Dependence of Breakdown and Threshold Voltage

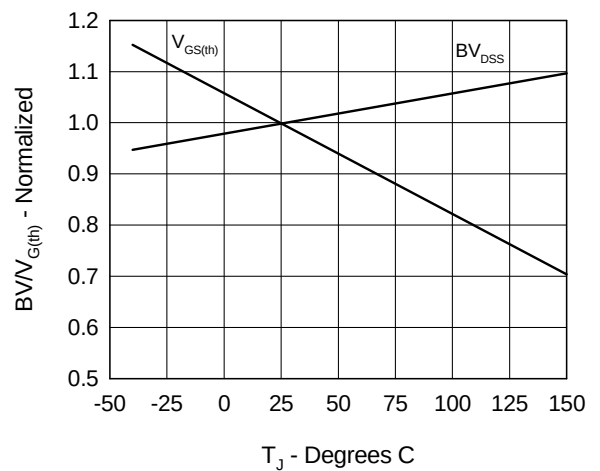


Fig.7 Gate Charge Characteristic Curve

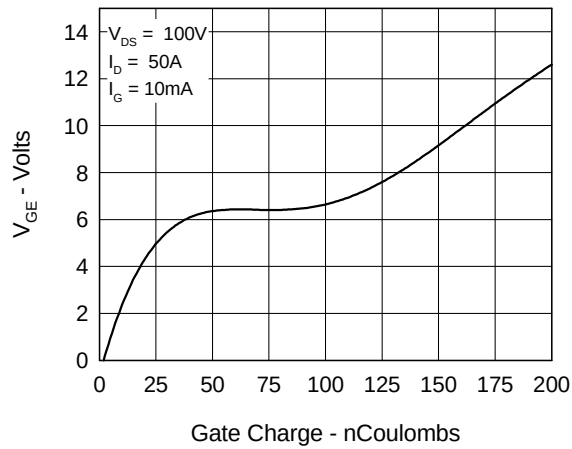


Fig.8 Forward Bias Safe Operating Area

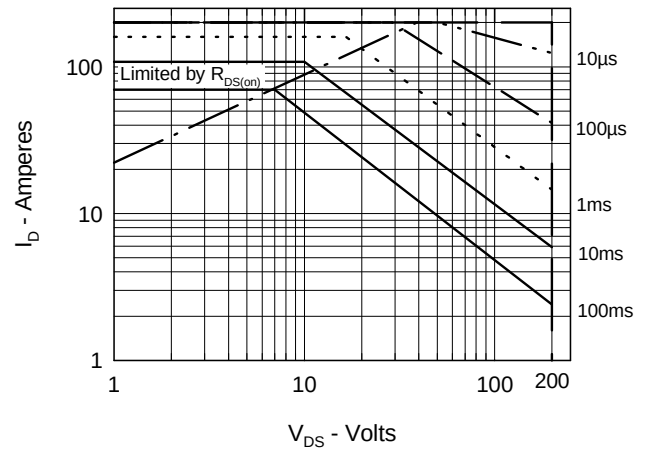


Fig.9 Capacitance Curves

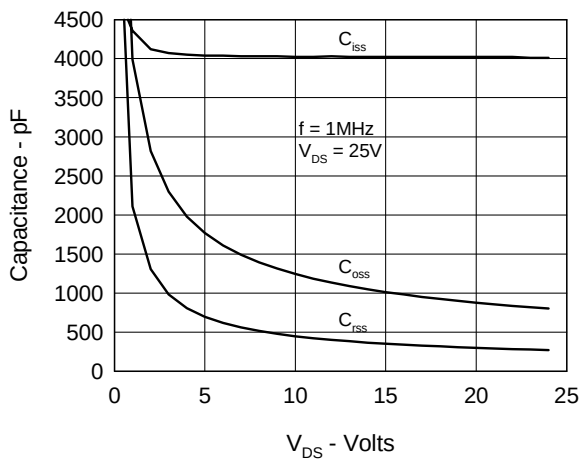


Fig.10 Source Current vs. Source to Drain Voltage

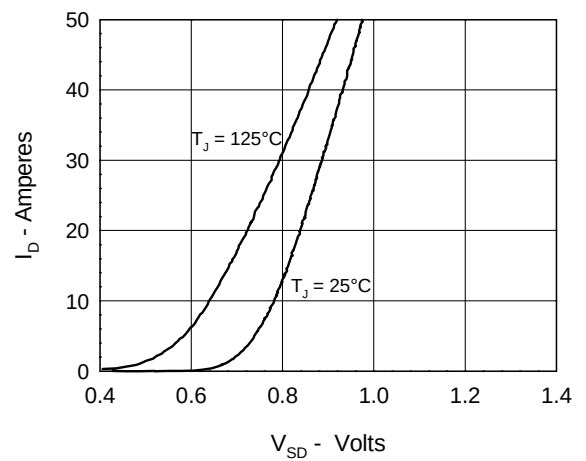
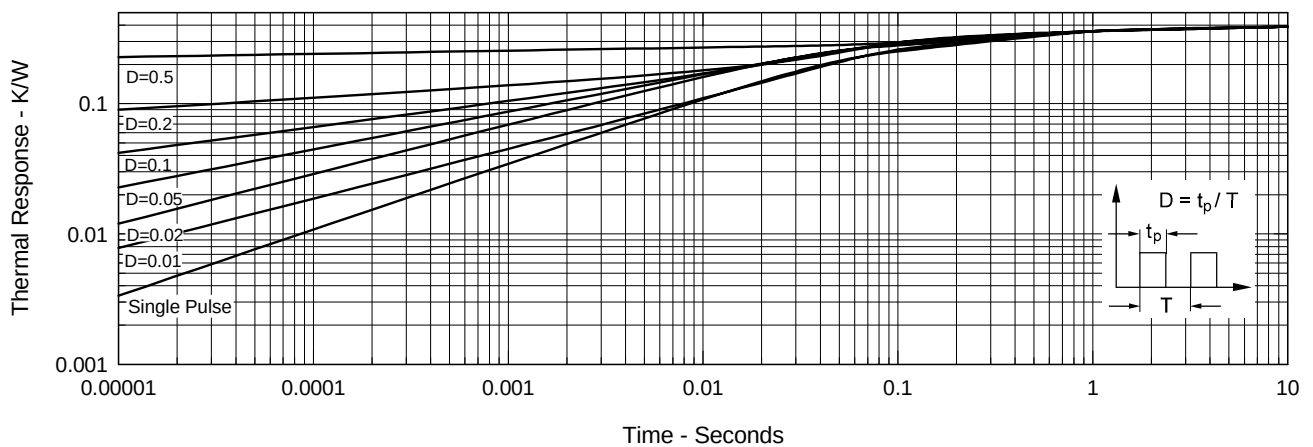


Fig.11 Transient Thermal Impedance





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