IXTA05N100HV Datasheet

DiGi Electronics Part Number	IXTA05N100HV-DG
Manufacturer	IXYS
Manufacturer Product Number	IXTA05N100HV
Description	MOSFET N-CH 1000V 750MA TO263
Detailed Description	N-Channel 1000 V 750mA (Tc) 40W (Tc) Surface Mount TO-263HV

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
IXTA05N100HV	IXYS
Series:	Product Status:
-	Active
FET Type:	Technology:
N-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
1000 V	750mA (Tc)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
10V	17Ohm @ 375mA, 10V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
4.5V @ 250µA	7.8 nC @ 10 V
Vgs (Max):	Input Capacitance (Ciss) (Max) @ Vds:
±30V	260 pF @ 25 V
FET Feature:	Power Dissipation (Max):
-	40W (Tc)
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Supplier Device Package:	Package / Case:
TO-263HV	TO-263-3, D2PAK (2 Leads + Tab), TO-263AB
Base Product Number:	
IXTA05	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.29.0095	

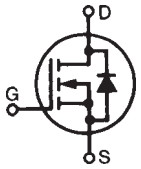
IXYS

High Voltage Power MOSFET

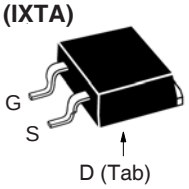
IXTA05N100HV
IXTA05N100
IXTP05N100

V_{DSS} = 1000V
I_{D25} = 750mA
$R_{DS(on)}$ ≤ 17Ω

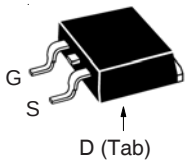
N-Channel Enhancement Mode
Avalanche Rated



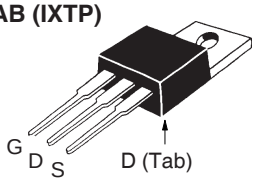
TO-263HV (IXTA)



TO-263 AA (IXTA)



TO-220AB (IXTP)



G = Gate D = Drain
S = Source Tab = Drain

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	1000	V
V_{DGR}	T_J = 25°C to 150°C, R_{GS} = 1MΩ	1000	V
V_{GSS}	Continuous	±30	V
V_{GSM}	Transient	±40	V
I_{D25}	T_C = 25°C	750	mA
I_{DM}	T_C = 25°C, Pulse Width Limited by T_{JM}	3	A
I_A	T_C = 25°C	1	A
E_{AS}	T_C = 25°C	100	mJ
dv/dt	$I_S \le I_{DM}$, $V_{DD} \le V_{DSS}$, T_J =150°C	3	V/ns
P_D	T_C = 25°C	40	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	Maximum Lead Temperature for Soldering	300	°C
T_{SOLD}	1.6 mm (0.062in.) from Case for 10s	260	°C
M_d	Mounting Torque (TO-220)	1.13 / 10	Nm/lb.in
Weight	TO-220	3.0	g
	TO-263	2.5	g
	TO-263HV	2.5	g

Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0V, I_D = 250μA	1000			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 250μA	2.5		4.5	V
I_{GSS}	V_{GS} = ± 30V, V_{DS} = 0V			±100	nA
I_{DSS}	$V_{DS} = V_{DSS}$, V_{GS} = 0V			25	μA
	T_J = 125°C			500	μA
$R_{DS(on)}$	V_{GS} = 10V, I_D = 375mA, Note 1			17	Ω

Features

- High Voltage Package (TO-263HV)
- Fast Switching Times
- Avalanche Rated
- $R_{ds(on)}$ HDMOS™ Process
- Rugged Polysilicon Gate Cell structure
- Extended FBSOA

Advantages

- High Power Density
- Space Savings

Applications

- Switch-Mode and Resonant-Mode Power Supplies
- Flyback Inverters
- DC Choppers

IXYS

IXTA05N100HV IXTA05N100
IXTP05N100

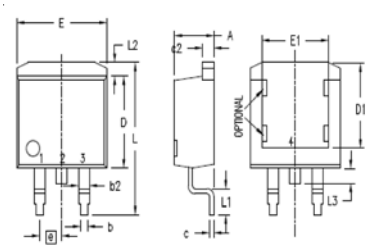
Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS} = 20V, I_D = 500mA, Note 1	0.55	0.93		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		260		pF
C_{oss}			22		pF
C_{rss}			8		pF
$t_{d(on)}$	**Resistive Switching Times**		11		ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 1A		19		ns
$t_{d(off)}$	R_G = 47Ω (External)		40		ns
t_f			28		ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 1A		7.8		nC
Q_{gs}			1.4		nC
Q_{gd}			4.1		nC
R_{thJC}				3.1	°C/W
R_{thCS}	(TO-220)		0.50		°C/W

Source-Drain Diode

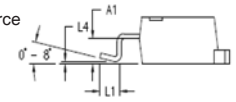
Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0V			750	mA
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			3	A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1			1.5	V
t_{rr}	I_F = I_S, -di/dt = 100A/μs V_R = 100V, V_{GS} = 0V		710		ns

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

TO-263AA Outline

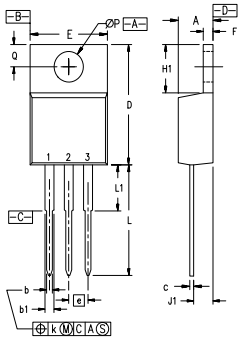


PIN: 1 - Gate
2,4 - Source
3 - Drain



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.160	.190	4.06	4.83
A1	.080	.110	2.03	2.79
b	.020	.039	0.51	0.99
b2	.045	.055	1.14	1.40
c	.016	.029	0.40	0.74
c2	.045	.055	1.14	1.40
D	.340	.380	8.64	9.65
D1	.315	.350	8.00	8.89
E	.380	.410	9.65	10.41
E1	.245	.320	6.22	8.13
e	.100 BSC		2.54 BSC	
L	.575	.625	14.61	15.88
L1	.090	.110	2.29	2.79
L2	.040	.055	1.02	1.40
L3	.050	.070	1.27	1.78
L4	0	.005	0	0.13

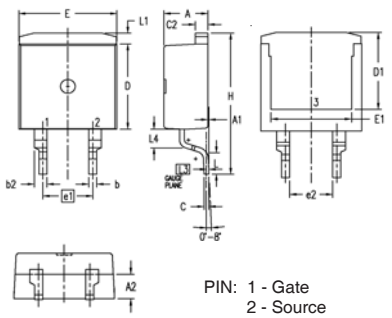
TO-220AB Outline



Pins: 1 - Gate 2 - Drain
3 - Source

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
c	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
e	.100 BSC		2.54 BSC	
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØP	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18

TO-263HV Outline



PIN: 1 - Gate
2 - Source
3 - Drain

SYM	INCHES MIN	INCHES MAX	MILLIMETER MIN	MILLIMETER MAX
A	.170	.185	4.30	4.70
A1	.000	.008	0.00	0.20
A2	.091	.098	2.30	2.50
b	.028	.035	0.70	0.90
b2	.046	.054	1.18	1.38
C	.018	.024	0.45	0.60
C2	.049	.055	1.25	1.40
D	.354	.370	9.00	9.40
D1	.311	.327	7.90	8.30
E	.386	.402	9.80	10.20
E1	.307	.323	7.80	8.20
e1	.200 BSC		5.08 BSC	
(e2)	.163	.174	4.13	4.43
H	.591	.614	15.00	15.60
L	.079	.102	2.00	2.60
L1	.039	.055	1.00	1.40
L3	.010 BSC		0.254 BSC	
(L4)	.071	.087	1.80	2.20

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

Fig. 1. Output Characteristics @ T_J = 25ºC

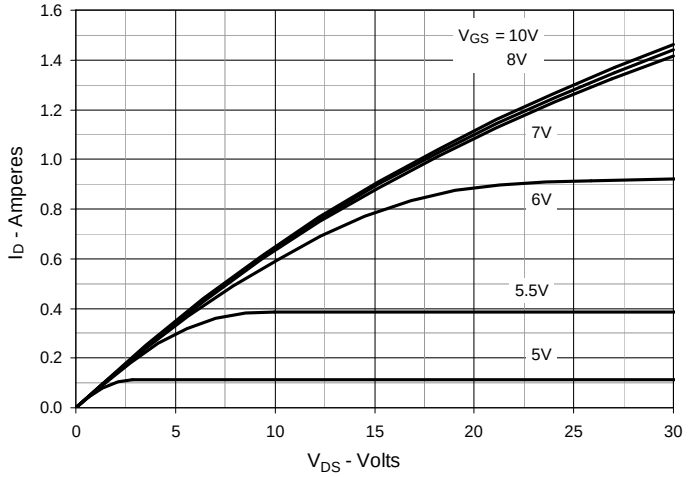


Fig. 2. Output Characteristics @ T_J = 125ºC

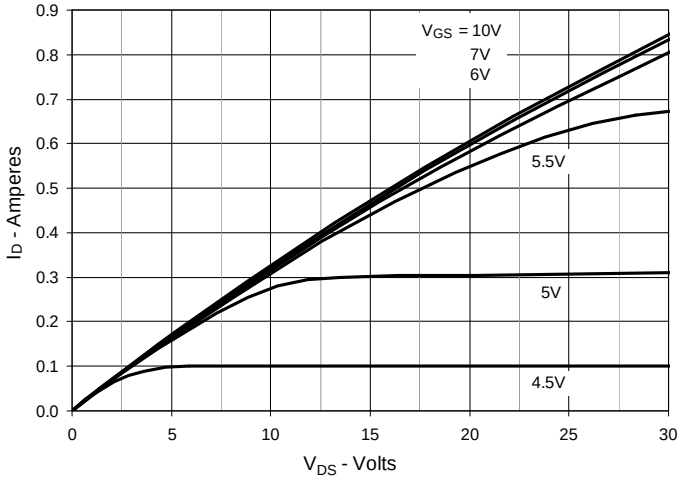


Fig. 3. $R_{DS(on)}$ Normalized to I_D = 375mA Value vs. Junction Temperature

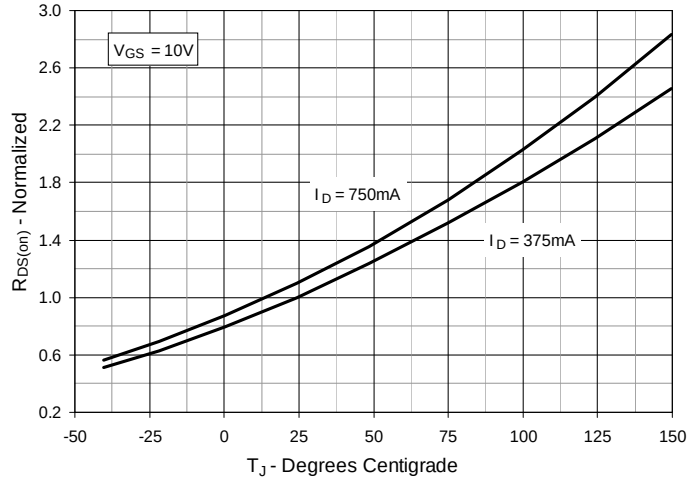


Fig. 4. $R_{DS(on)}$ Normalized to I_D = 375mA Value vs. Drain Current

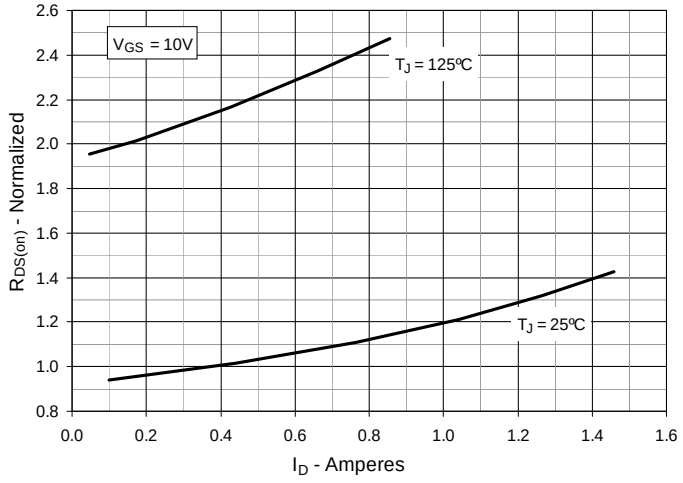


Fig. 5. Maximum Drain Current vs. Case Temperature

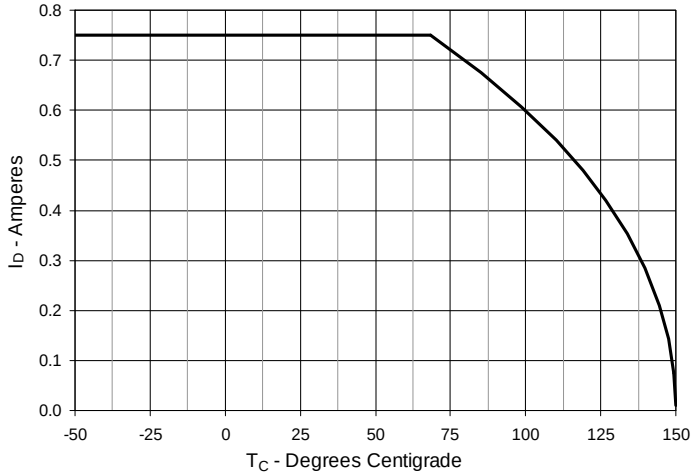


Fig. 6. Input Admittance

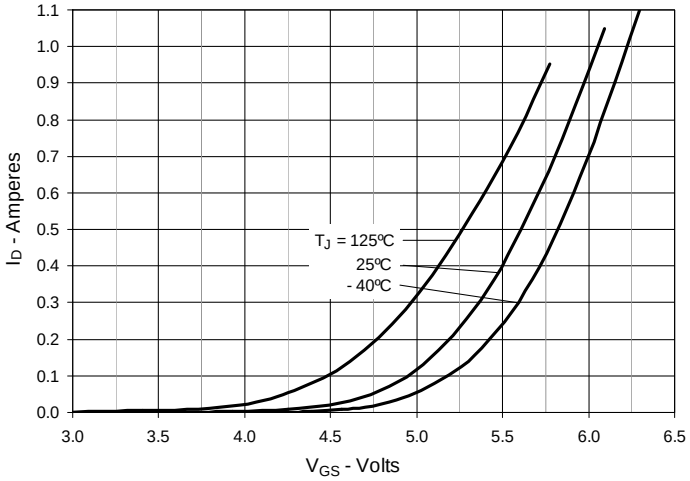


Fig. 7. Transconductance

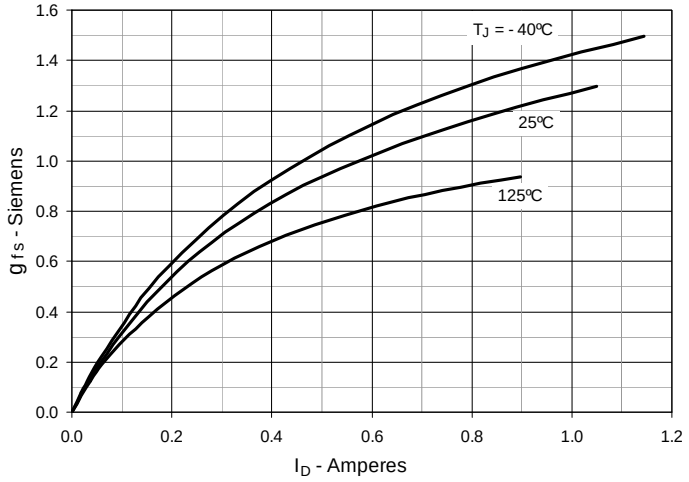


Fig. 8. Forward Voltage Drop of Intrinsic Diode

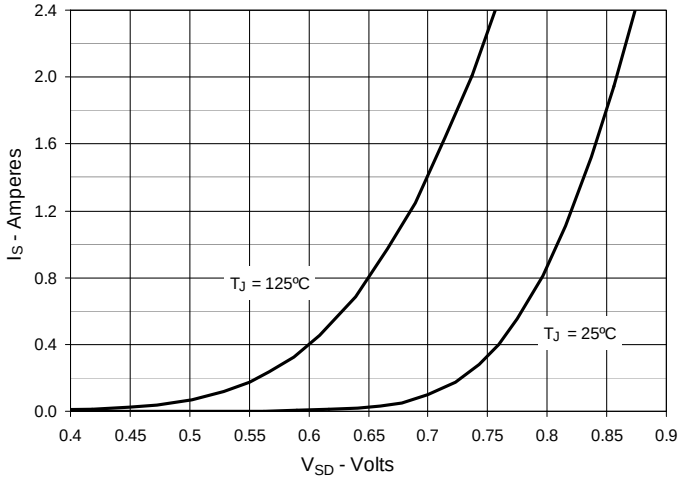


Fig. 9. Gate Charge

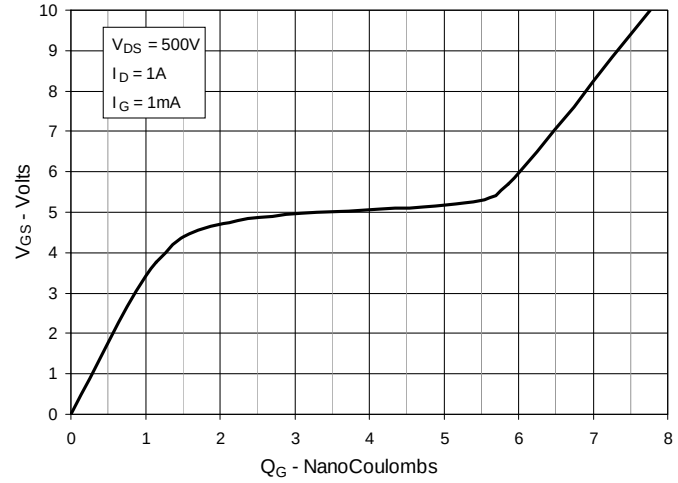


Fig. 10. Capacitance

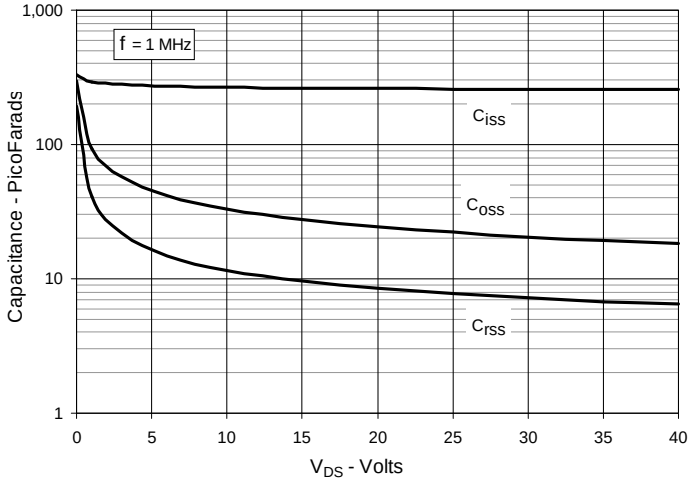


Fig. 11. Forward-Bias Safe Operating Area @ T_C = 25ºC

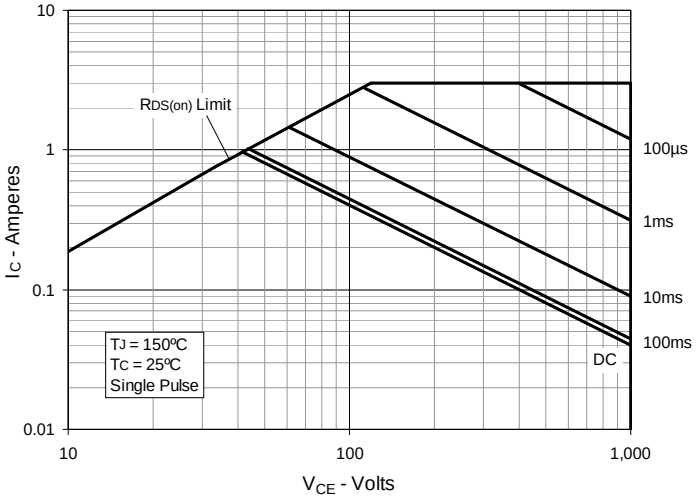


Fig. 12. Forward-Bias Safe Operating Area @ T_C = 75ºC

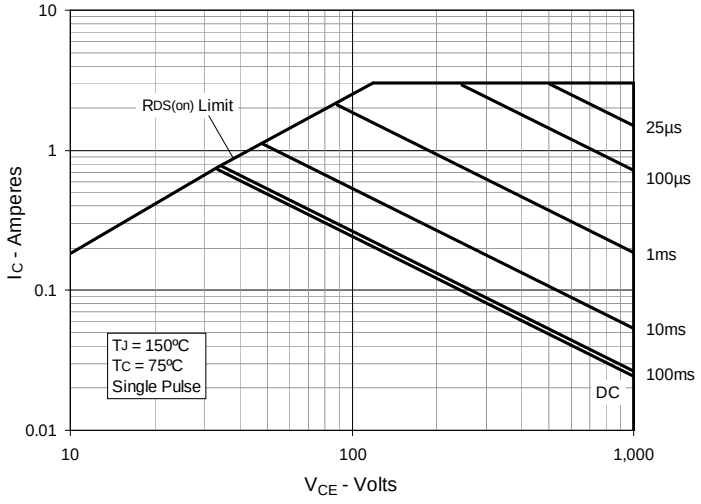
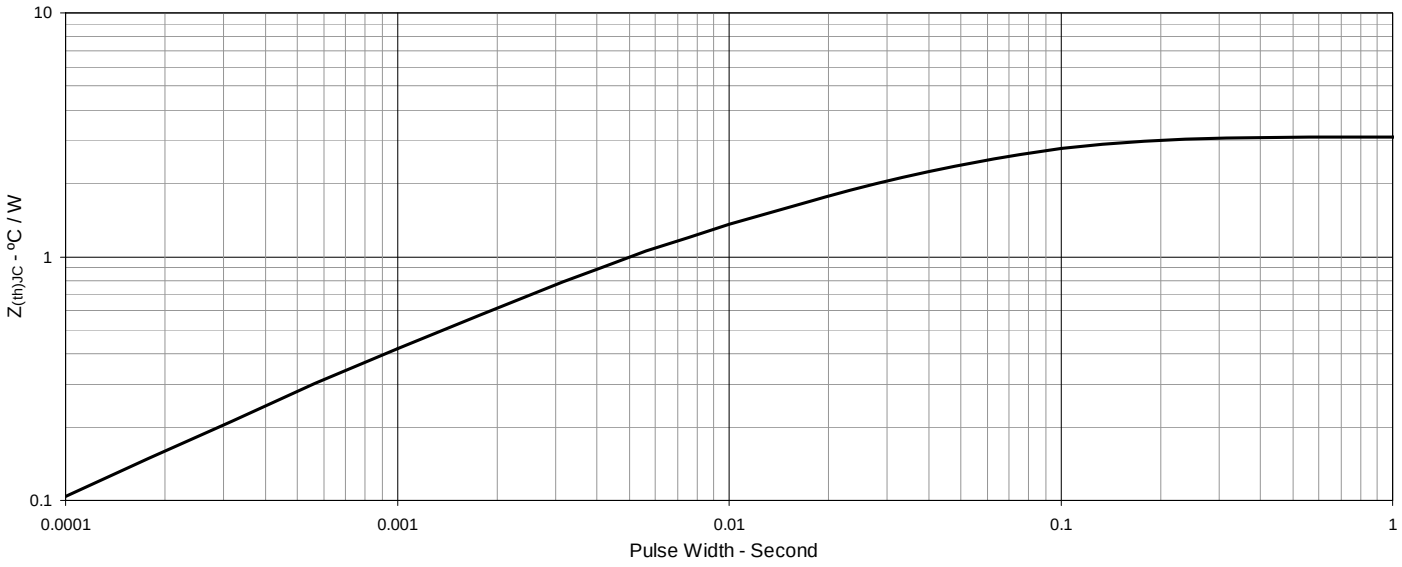
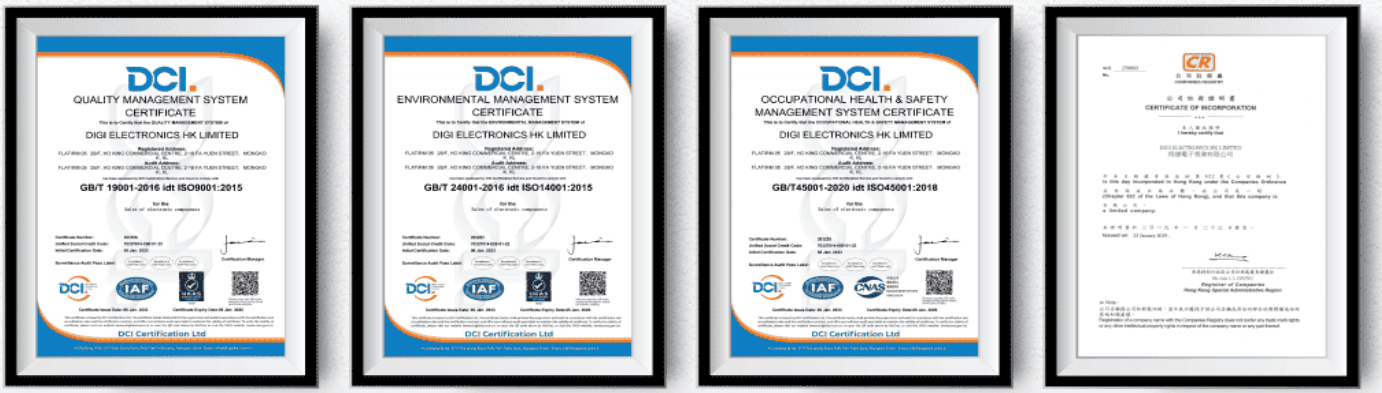


Fig. 13. Maximum Transient Thermal Impedance



OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we striciy control the quality of products and services. Welcome your RFQ to Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.