

公司型号	工业型号	封装形式	H	包装规格	载带卷盘包装	每卷数量	每盒数量
H0110D H0110K	NCE0110K	DPAK TO-252	HAOHAI			2500Pcs	2500Pcs

DESCRIPTION

The H0110D (H0110K) uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

GENERAL FEATURES

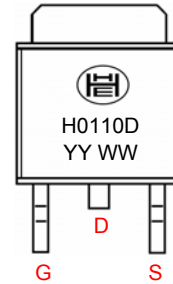
$I_D=9.6A$, $V_{DS}=100V$
 $R_{DS(ON)} < 130m\Omega @ V_{GS}=10V$ (Typ: 105m Ω)
 High density cell design for ultra low $R_{DS(ON)}$
 Fully characterized Avalanche voltage and current
 Good stability and uniformity with high EAS
 Excellent package for good heat dissipation
 Special process technology for high ESD capability
 100% UIS TESTED ! 100% ΔV_{DS} TESTED !

Application

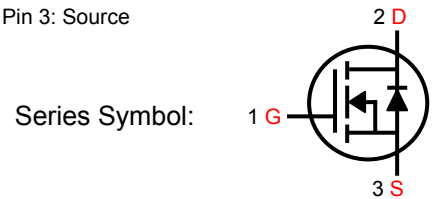
Power switching application
 Hard Switched and High Frequency Circuits
 Uninterruptible Power Supply

$I_D=9.6A$
 $V_{DS}=100V$
 $R_{DS(on)}=105m\Omega$

H0110D Series Pin Assignment



2-Lead Plastic TO-252
 Package Code: D
 Pin 1: Gate
 Pin 2: Drain
 Pin 3: Source



Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	
Drain Current-Continuous ($T_C=25^\circ C$)	I_D	9.6	A
Drain Current-Continuous ($T_C=100^\circ C$)		6.5	
Pulsed Drain Current		I_{DM}	
Maximum Power Dissipation	P_D	30	W
Derating factor		0.24	W/ $^\circ C$
Single pulse avalanche energy (Note 5)	E_{AS}	150	mJ
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

Thermal Characteristic

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Case (Note 2)	$R_{\theta JC}$	4.17	$^\circ C/W$

■ Electrical Characteristics (T_C=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
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■ Off Characteristics

Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	100	110	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA

■ On Characteristics (Note 3)

Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3.2	4	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A	--	105	140	mΩ
Forward Transconductance	g _{FS}	V _{DS} =50V, I _D =6A	3.5	--	--	S

■ On Characteristics (Note 4)

Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V F=1.0MHz	--	690	--	pF
Output Capacitance	C _{oss}		--	120	--	
Reverse Transfer Capacitance	C _{rss}		--	90	--	

■ Switching Characteristics (Note 4)

Turn-on Delay Time	t _{d(on)}	V _{DD} =30V I _D =2A V _{GS} =10V R _{GEN} =2.5Ω	--	11	--	nS
Turn-on Rise Time	t _r		--	7.4	--	
Turn-Off Delay Time	t _{d(off)}		--	35	--	
Turn-Off Fall Time	t _f		--	9.1	--	
Total Gate Charge	Q _g	V _{DS} =30V I _D =3A V _{GS} =10V	--	15.5	--	nC
Gate-Source Charge	Q _{gs}		--	3.2	--	
Gate-Drain Charge	Q _{gd}		--	4.7	--	

■ Drain-Source Diode Characteristics

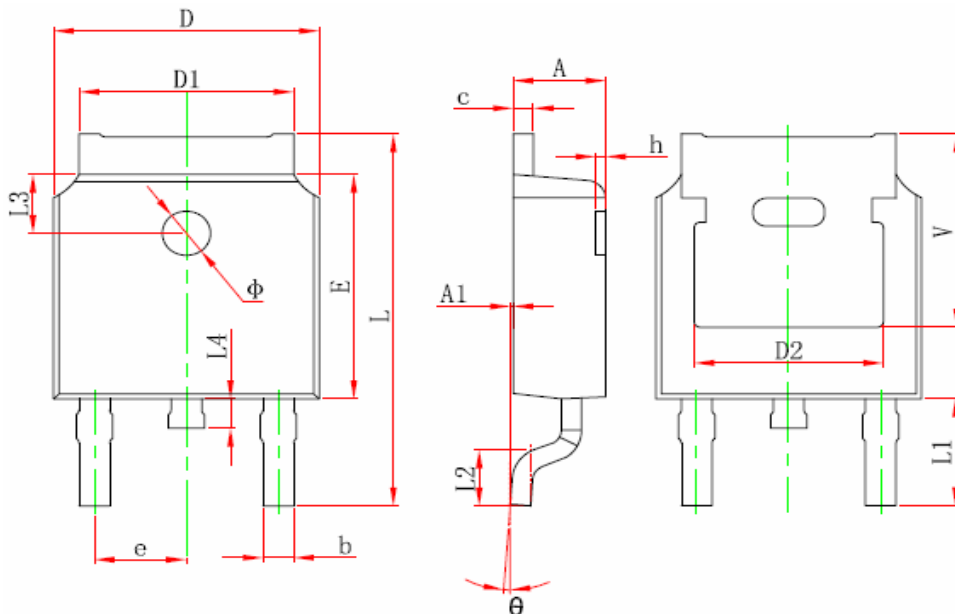
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V, I _S =9A	--	--	1.2	V
Diode Forward Current (Note 2)	I _S	--	--	--	9.6	A
Reverse Recovery Time	t _{rr}	T _J =25°C, I _F =6A di/dt=100A/μs (Note3)	--	21	--	nS
Reverse Recovery Charge	Q _{rr}		--	97	--	nC
Forward Turn-On Time	t _{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
4. Guaranteed by design, not subject to production
5. EAS condition: T_J=25°C, V_{DD}=50V, V_G=10V, L=0.5mH, R_G=25Ω

PACKAGE DIMENSIONS

■ TO-252-2L (DPAK) PACKAGE INFORMATION (TO-252封装尺寸数据)



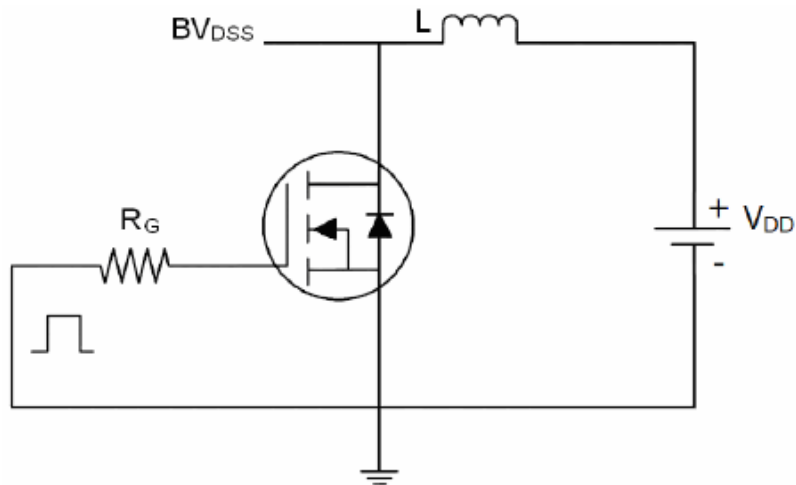
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.188	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1				
L2	1.400	1.700	0.055	0.067
L3	2.900 REF.		0.114 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	

■ 包装规格 Packaging Specifications

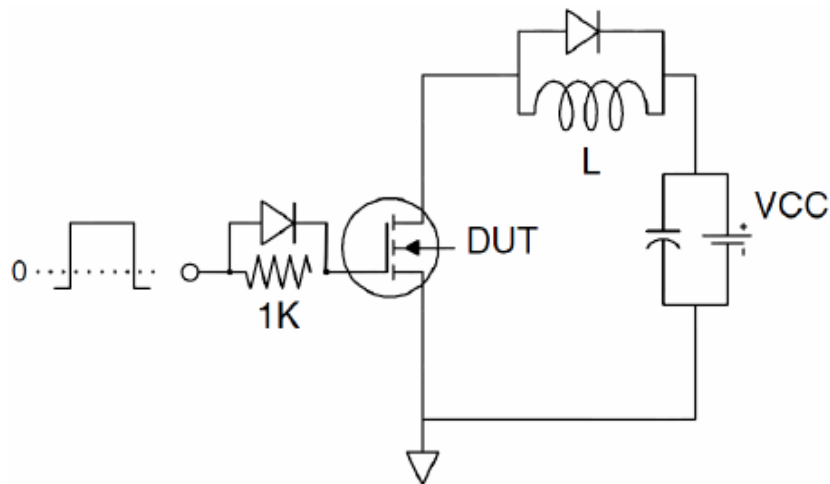
TO-252 DPAK	一、管装，每管80只，每盒4000只，每箱40000只 (80Pcs/Tub, 4Kpcs/BOX, 40Kpcs/Carton)
	二、载带卷盘包装，每卷盘2500只，每盒1卷盘，每箱25000只 (2.5Kpcs/Reel, 25Kpcs/Carton)

Test circuit

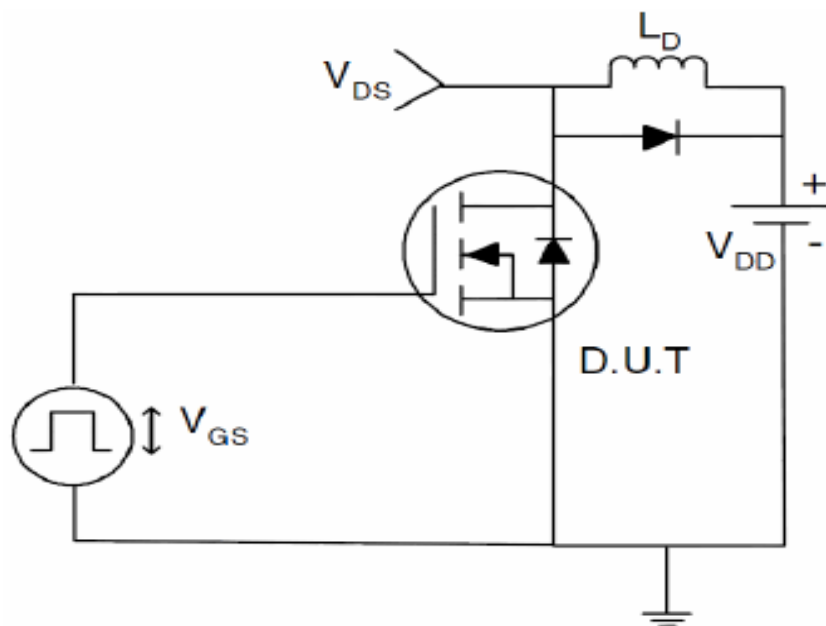
1: E_{AS} test Circuits



2: Gate charge test Circuit:



3: Switch Time Test Circuit



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS (Curves)

Fig-1: Output Characteristics

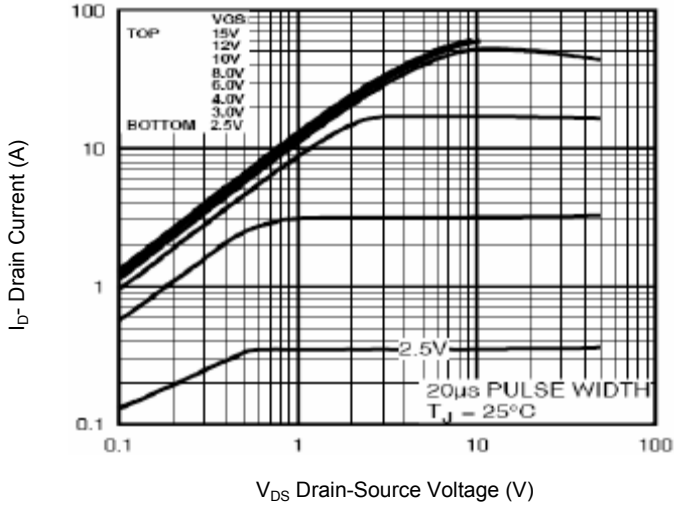


Fig-4: Rds(on)-Junction Temperature

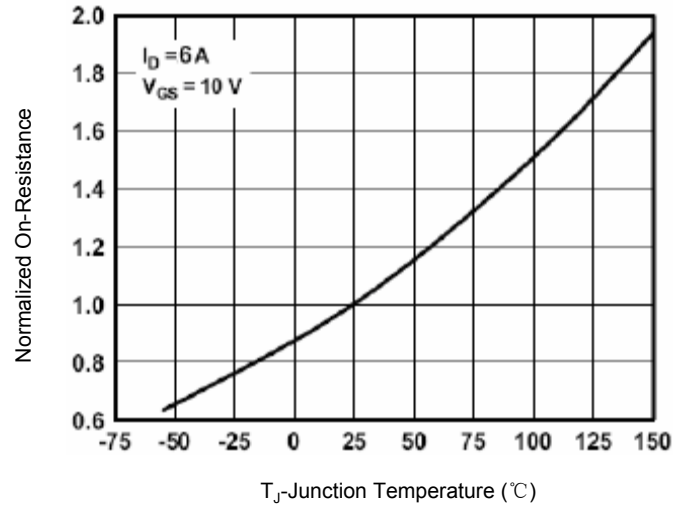


Fig-2: Transfer Characteristics

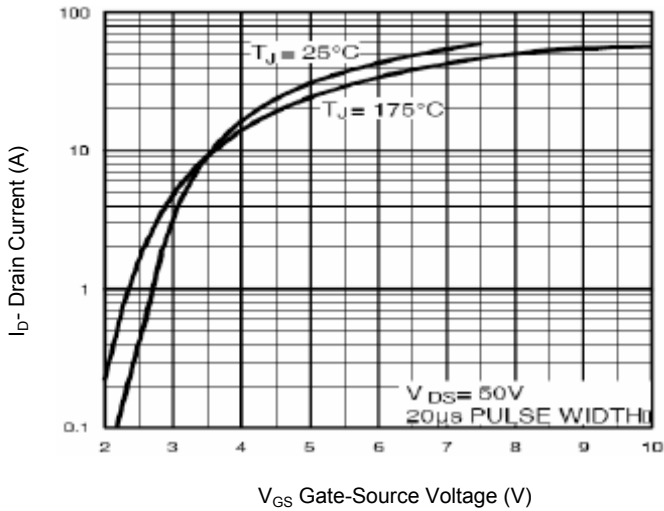


Fig-5: Gate Charge

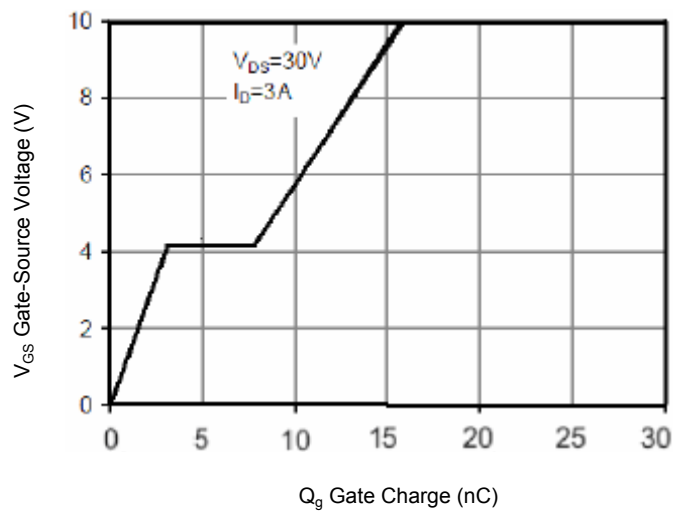


Fig-3: Rds(on)- Drain Current

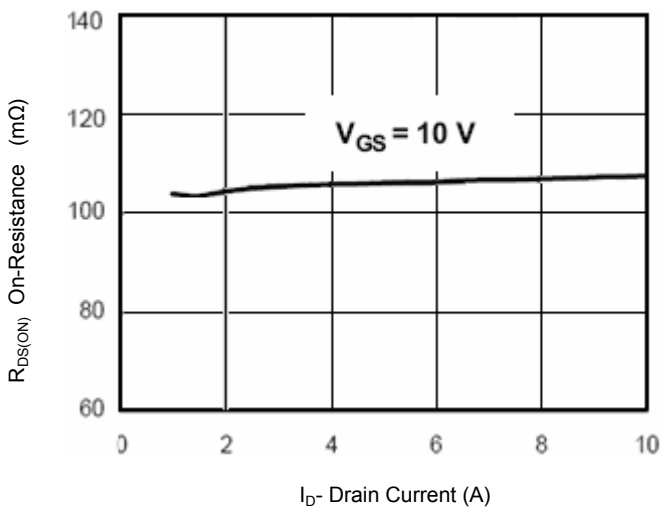


Fig-6: Source- Drain Diode Forward

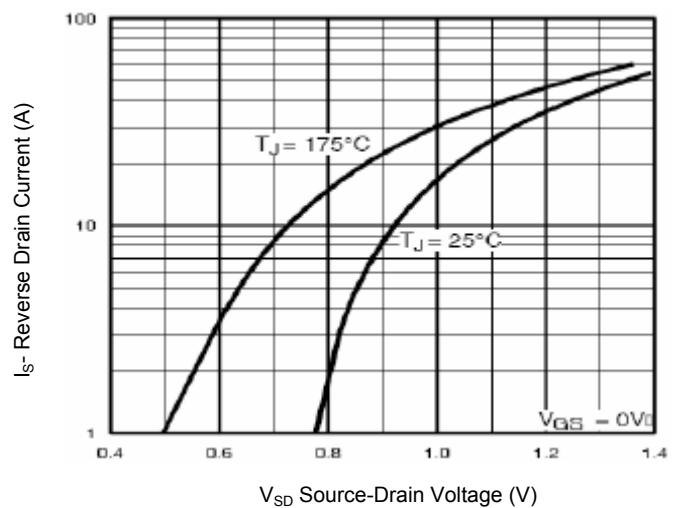


Fig-7: Capacitance vs V_{DS}

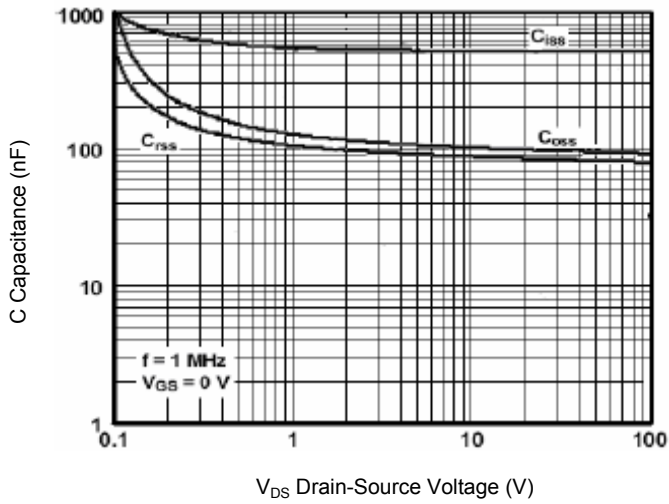


Fig-9: BV_{DSS} vs Junction Temperature

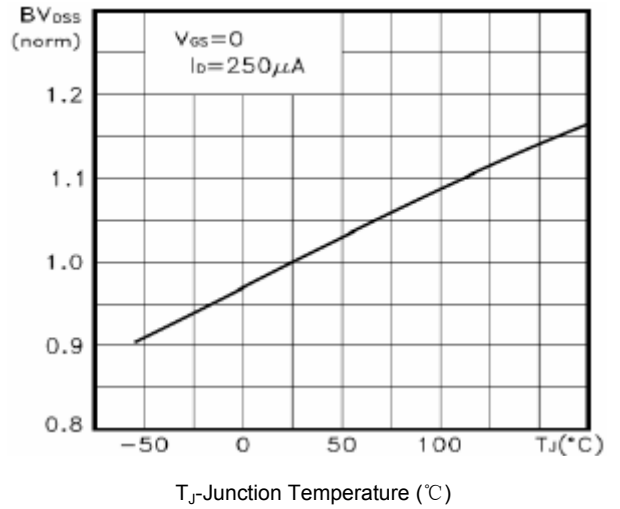


Fig-8: Safe Operation Area

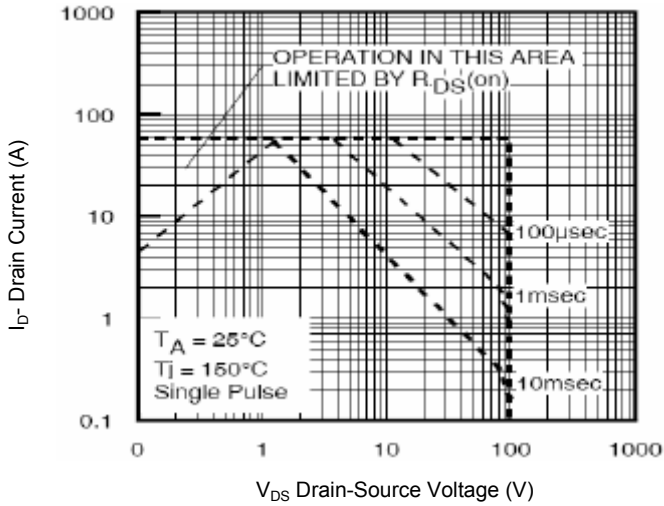


Fig-10: Power De-rating

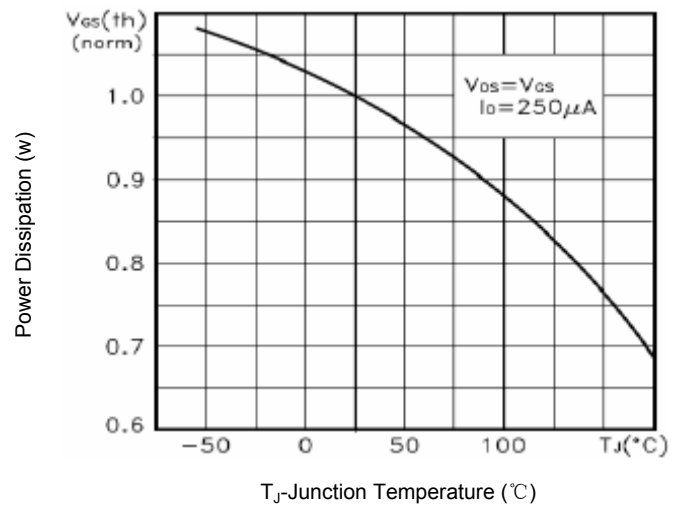
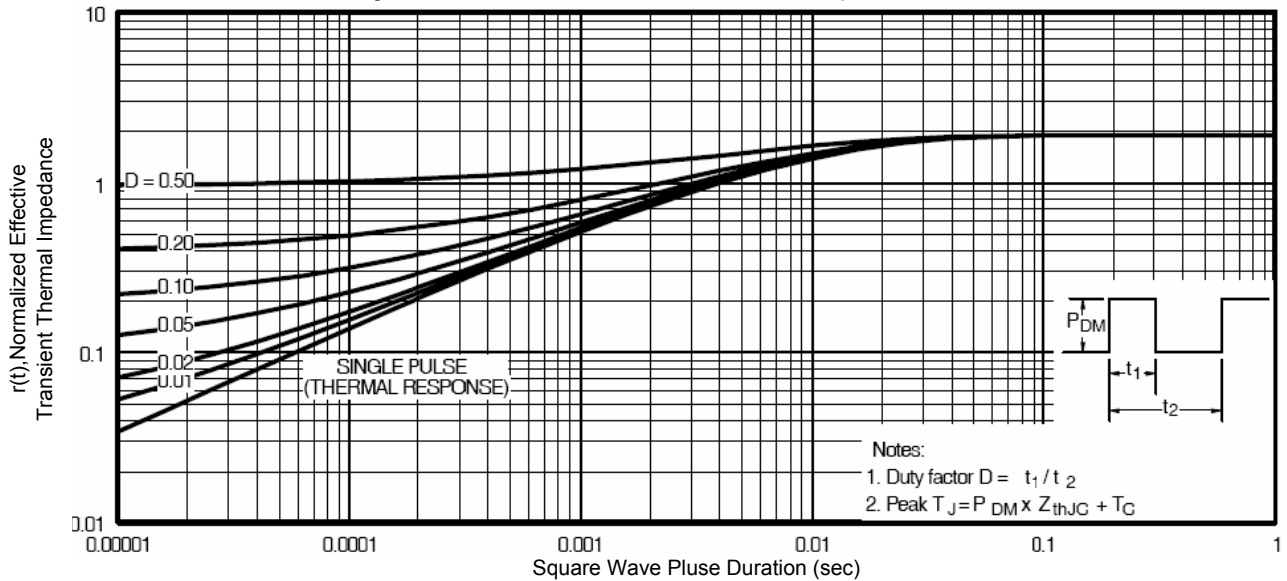


Fig-11: Normalized Maximum Transient Thermal Impedance



Manufacturers version information

2012-03-15 , HAOHAI™ Product Data-1.0

2014-03-20 , HAOHAI™ Product Data-2.0



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