



SPN4436W

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN4436W is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application , notebook computer power management and other battery powered circuits where high-side switching .

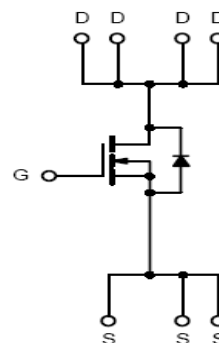
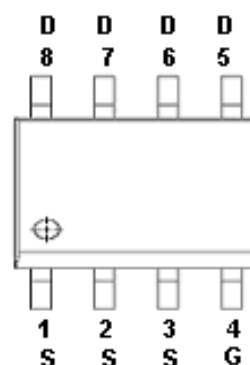
FEATURES

- ◆ 60V/8.0A, $R_{DS(ON)}=38m\Omega@V_{GS}=10V$
- ◆ 60V/6.0A, $R_{DS(ON)}=44m\Omega@V_{GS}=4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ SOP-8 package design

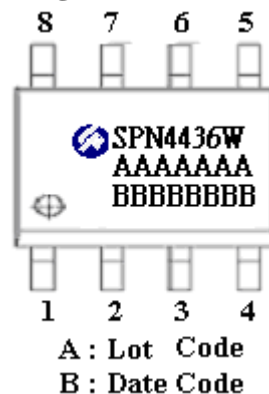
APPLICATIONS

- DC/DC Converter
- Load Switch

PIN CONFIGURATION(SOP-8)



PART MARKING





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PIN DESCRIPTION

Pin	Symbol	Description
1	S	Source
2	S	Source
3	S	Source
4	G	Gate
5	D	Drain
6	D	Drain
7	D	Drain
8	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN4436WS8RGB	SOP-8	SPN4436W

※ SPN4436WS8RGB : 13" Tape Reel ; Pb – Free ; Halogen – Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	60	V
Gate –Source Voltage		V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	8.0	A
	T _A =70°C		7.2	
Pulsed Drain Current		I _{DM}	35	A
Avalanche Current		I _{AS}	15	A
Power Dissipation	T _A =25°C	P _D	2.5	W
	T _A =70°C		1.6	
Operating Junction Temperature		T _J	-55/150	°C
Storage Temperature Range		T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	80	°C/W



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ELECTRICAL CHARACTERISTICS

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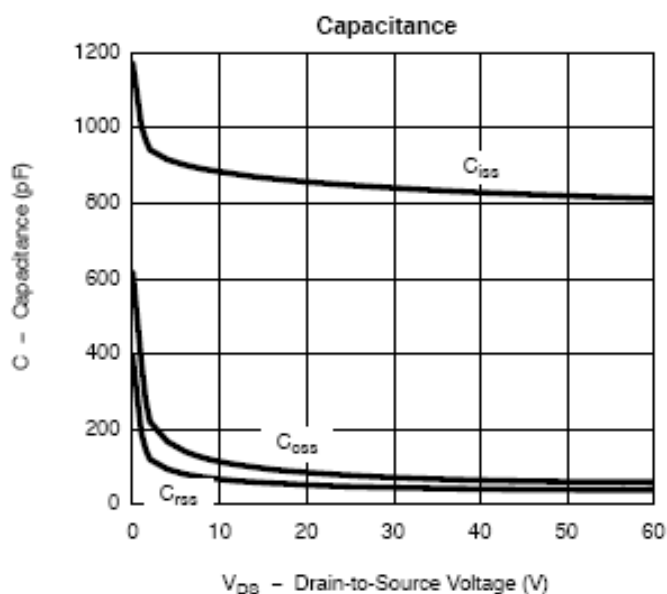
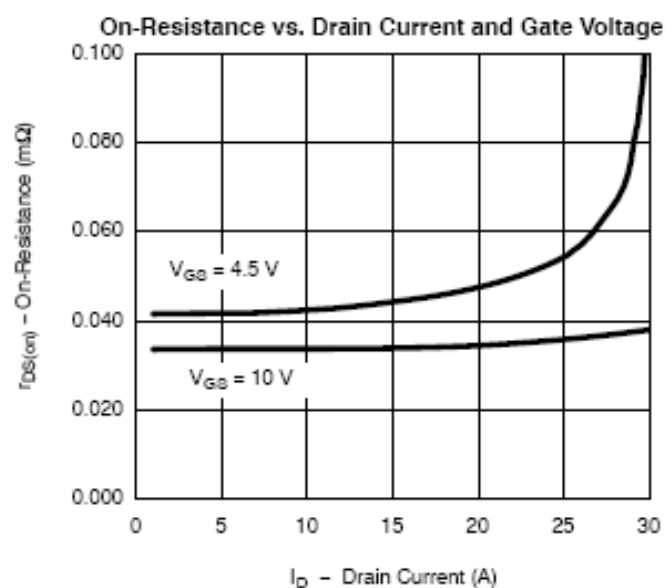
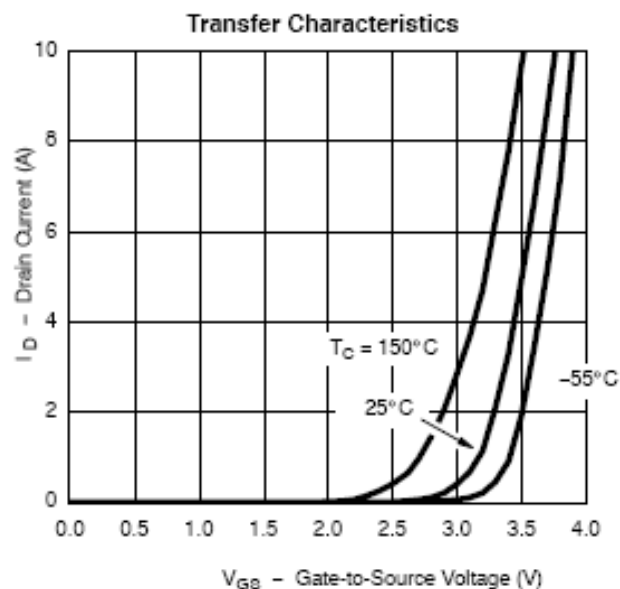
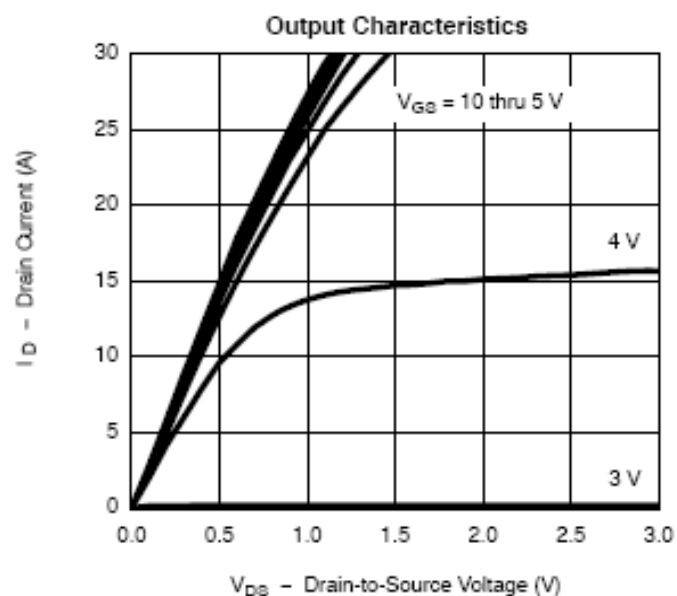
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.8		2.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} =0V			1	μA
		V _{DS} =48V, V _{GS} =0V T _J =85°C			5	
On-State Drain Current	I _{D(on)}	V _{DS} ≥5V, V _{GS} =10V	30			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8A		0.034	0.038	Ω
		V _{GS} =4.5V, I _D =6A		0.038	0.044	
Forward Transconductance	g _{fs}	V _{DS} =15V, I _D =5.3A		24		S
Diode Forward Voltage	V _{SD}	I _S =2.0A, V _{GS} =0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} =5V I _D =5.3A		10	15	nC
Gate-Source Charge	Q _{gs}			3.5		
Gate-Drain Charge	Q _{gd}			3.6		
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V f=1MHz		890		pF
Output Capacitance	C _{oss}			85		
Reverse Transfer Capacitance	C _{rss}			48		
Turn-On Time	t _{d(on)}	V _{DD} =30V, R _L =6.8Ω I _D =4.4A, V _{GEN} =10V R _G =1Ω		10	15	nS
	t _r			12	20	
Turn-Off Time	t _{d(off)}			25	35	
	t _f			10	15	



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TYPICAL CHARACTERISTICS

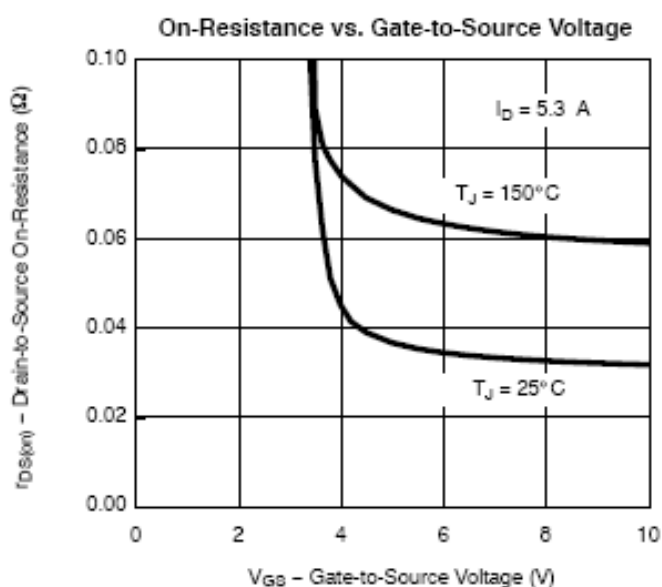
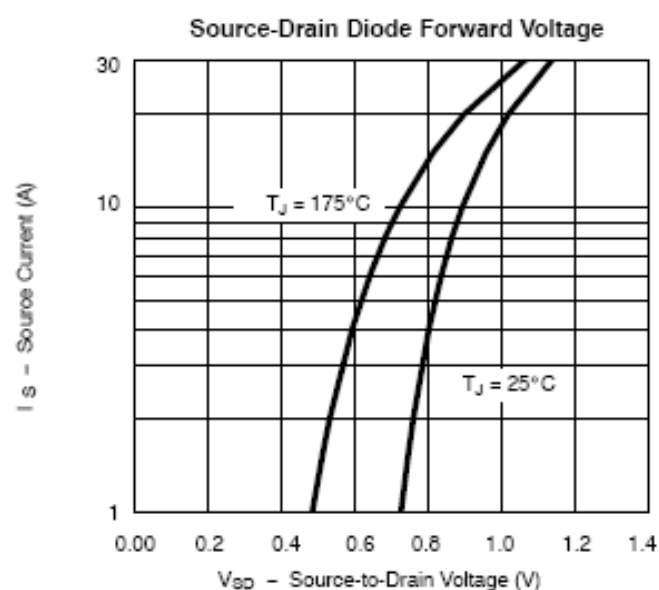
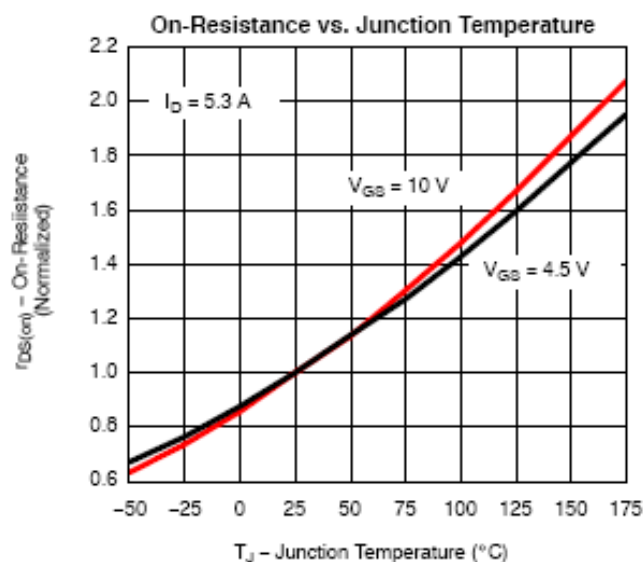
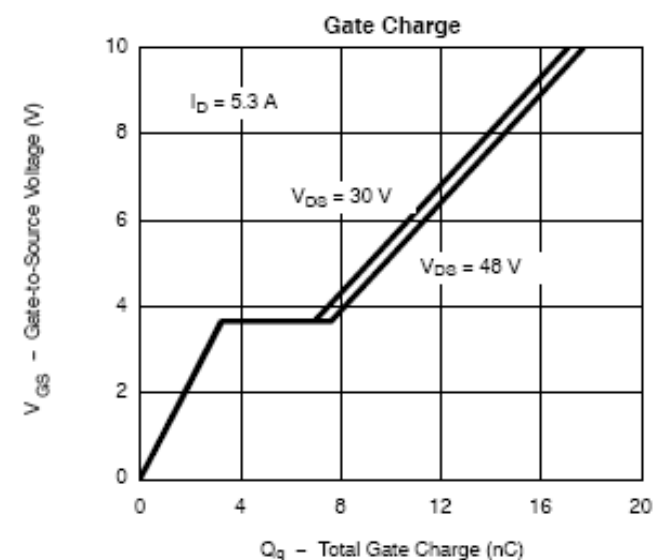




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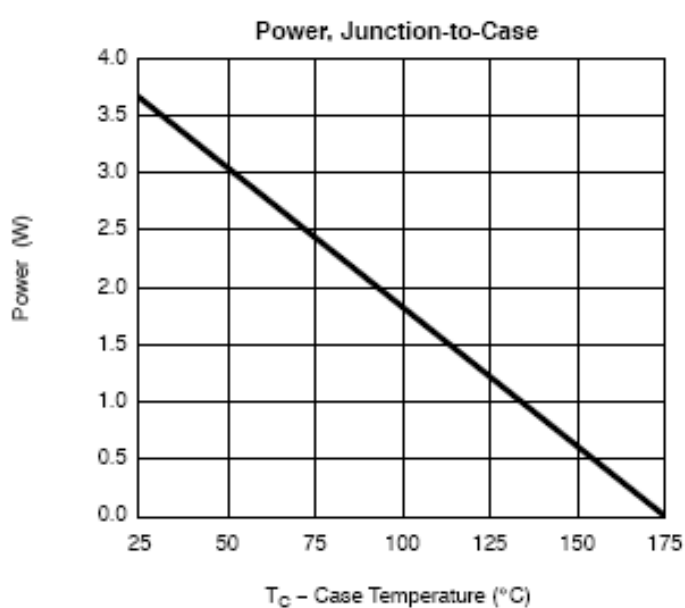
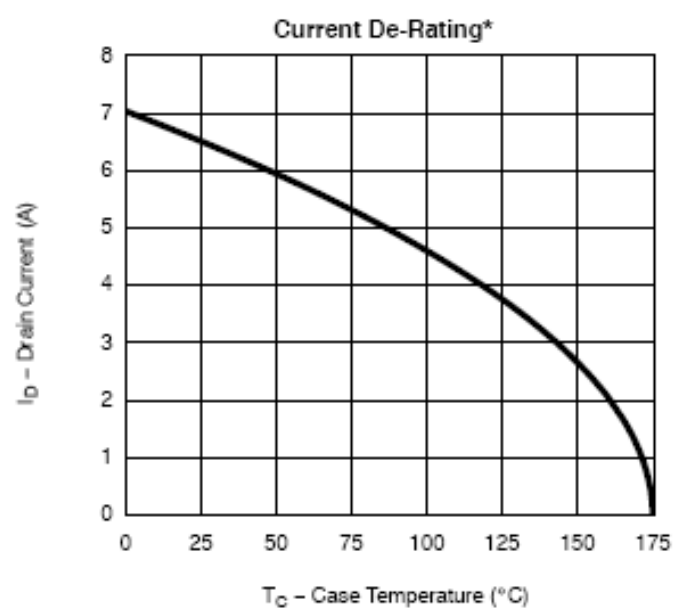
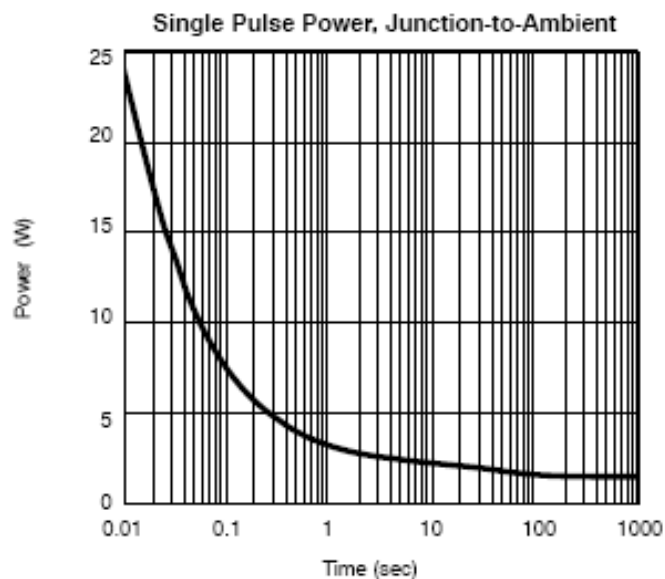
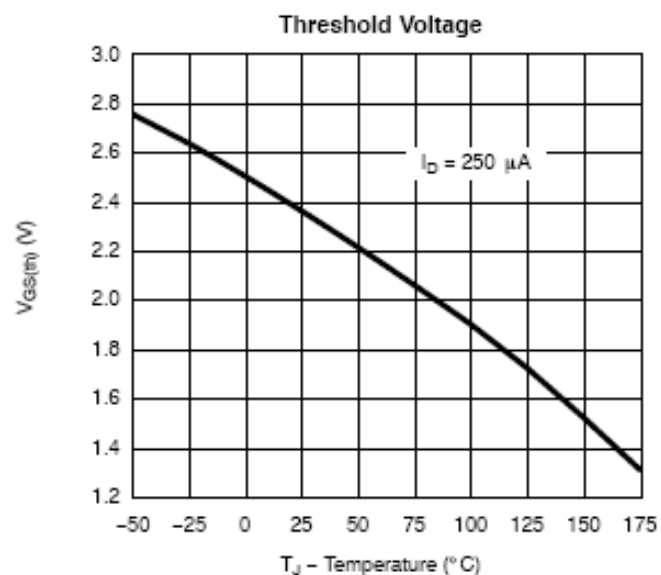




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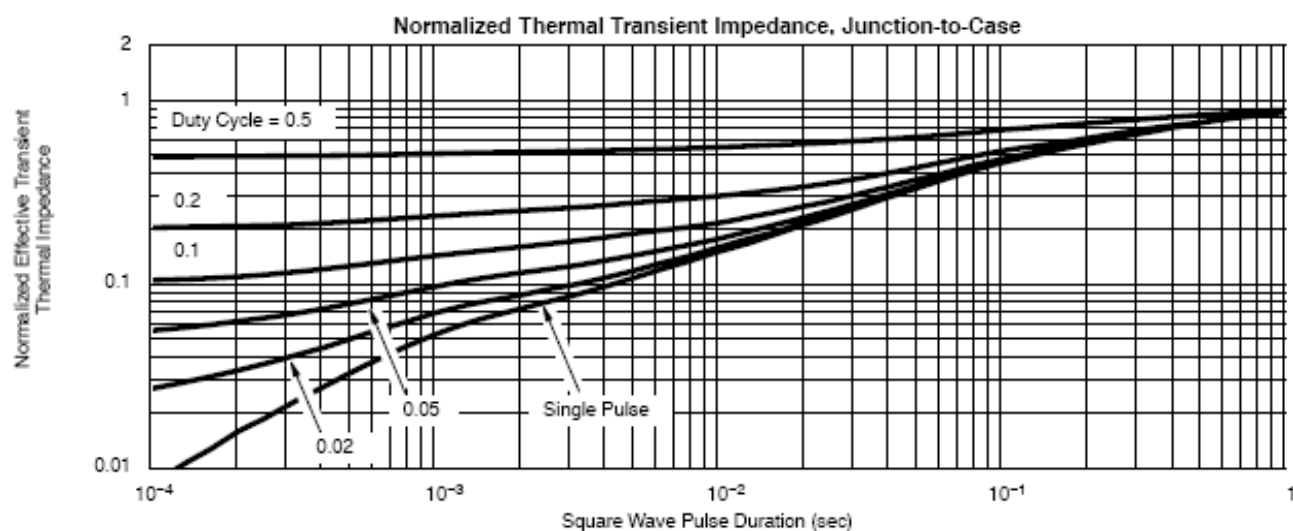
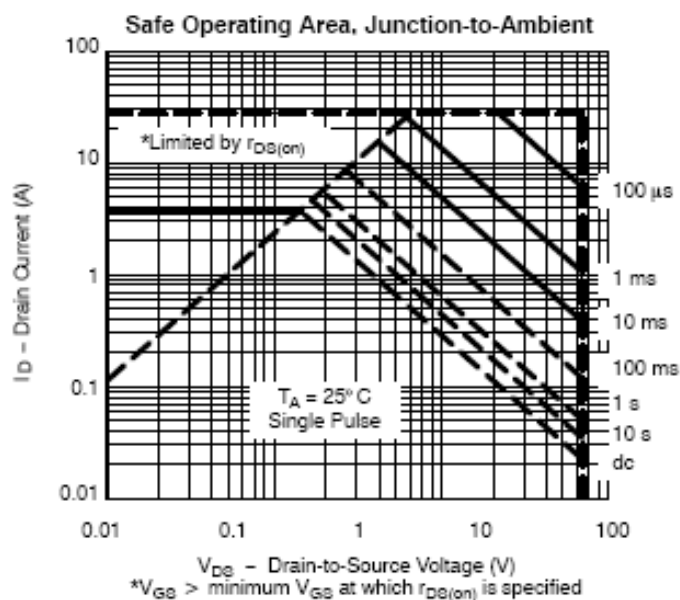
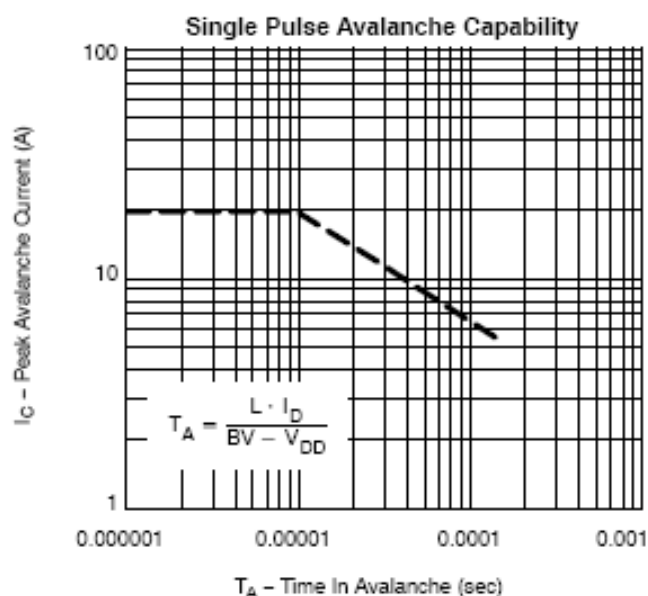




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TYPICAL CHARACTERISTICS





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