SPN6338

Dual N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN6338 is the Dual N-Channel 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 and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

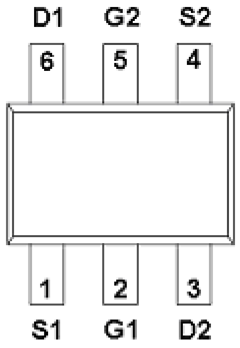
APPLICATIONS

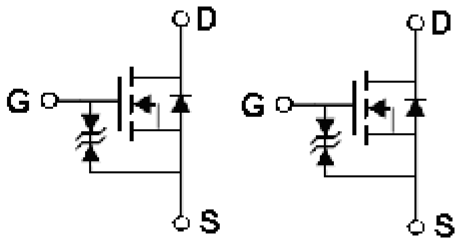
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

FEATURES

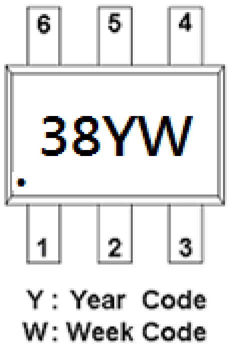
- N-Channel
  30V/0.95A,$R_{DS(ON)}$=550mΩ@V_{GS}=4.5V
  30V/0.75A,$R_{DS(ON)}$=650mΩ@V_{GS}=2.5V
  30V/0.65A,$R_{DS(ON)}$=850mΩ@V_{GS}=1.8V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- SOT-363 (SC-70-6L) package design

PIN CONFIGURATION(SOT-363 / SC-70-6L)





PART MARKING



PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN6338S36RGB	SOT-363	38YW

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)
※ SPN6338S36RGB : Tape Reel ; Pb – Free ; Halogen – Free

ABSOULTE MAXIMUM RATINGS

(TA=25℃ Unless otherwise noted)

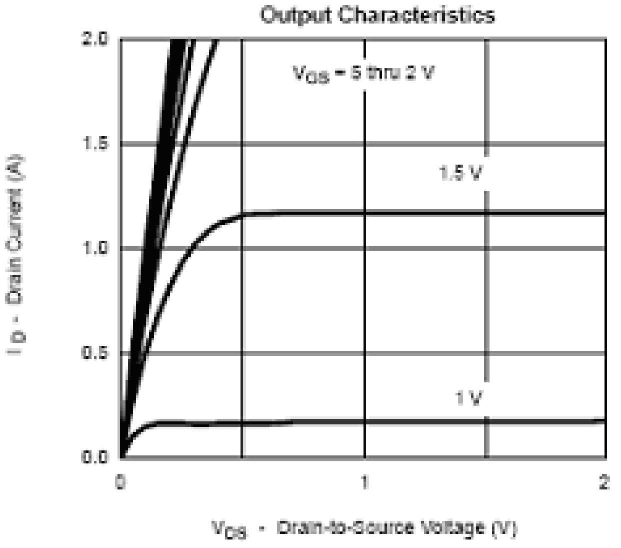
Parameter		Symbol	Typical	Unit
Drain-Source Voltage		VDSS	30	V
Gate –Source Voltage		VGSS	±12	V
Continuous Drain Current(TJ=150℃)	TA=25℃	ID	1.2	A
	TA=80℃		0.9	
Pulsed Drain Current		IDM	4	A
Continuous Source Current(Diode Conduction)		IS	0.6	A
Power Dissipation	TA=25℃	PD	0.35	W
	TA=70℃		0.19	
Operating Junction Temperature		TJ	-55/150	℃
Storage Temperature Range		TSTG	-55/150	℃

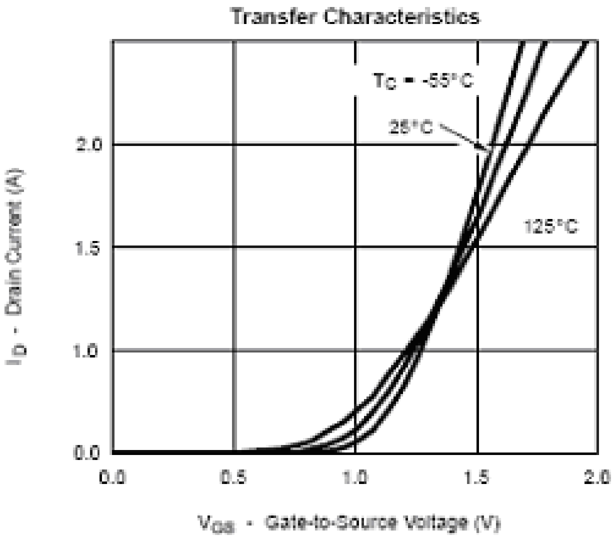
ELECTRICAL CHARACTERISTICS

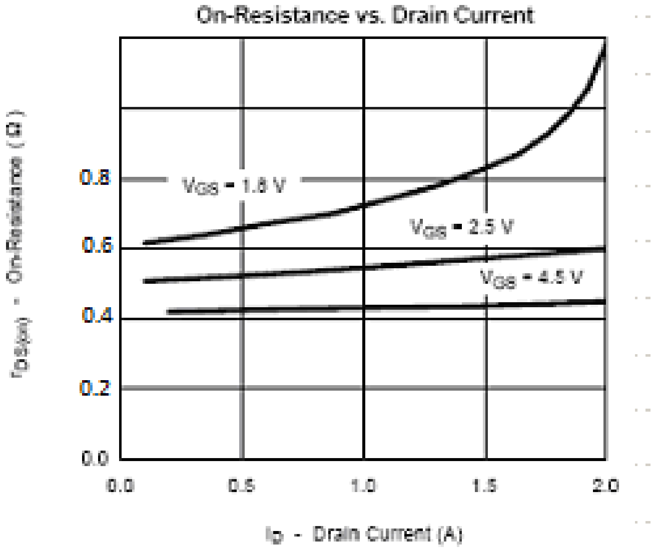
(T_A=25℃ Unless otherwise noted)

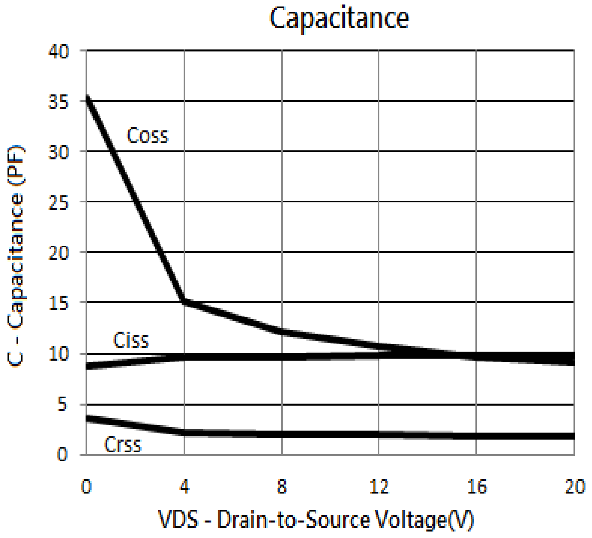
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D= 250uA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250uA	0.35		1.0	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±12V			30	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 24V,V_{GS}=0V			1	uA
		V_{DS}= 24V,V_{GS}=0V T_J=55℃			5	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\geq$ 4.5V,V_{GS} =5V	0.7			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V,I_D=0.95A		0.45	0.55	Ω
		V_{GS}=2.5V,I_D=0.75A		0.50	0.65	
		V_{GS}=1.8V,I_D=0.65A		0.70	0.85	
Forward Transconductance	gfs	V_{DS}=10V,I_D=0.4A		1.0		S
Diode Forward Voltage	V_{SD}	I_S=0.15A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V,V_{GS}=4.5V, I_D=0.6A		1.2	1.5	nC
Gate-Source Charge	Q_{gs}			0.2		
Gate-Drain Charge	Q_{gd}			0.3		
Input Capacitance	Ciss	VDS=10V, VGS=0V f=1MHz		7.2		pF
Output Capacitance	Coss			17		
Reverse Transfer Capacitance	Crss			1.6		
Turn-On Time	$t_{d(on)}$	V_{DD}=10V,R_L=10Ω , I_D=0.5A V_{GEN}=4.5V ,R_G=6Ω		5	10	ns
	t_r			8	15	
Turn-Off Time	$t_{d(off)}$			10	18	
	t_f			1.2	2.8	

TYPICAL CHARACTERISTICS

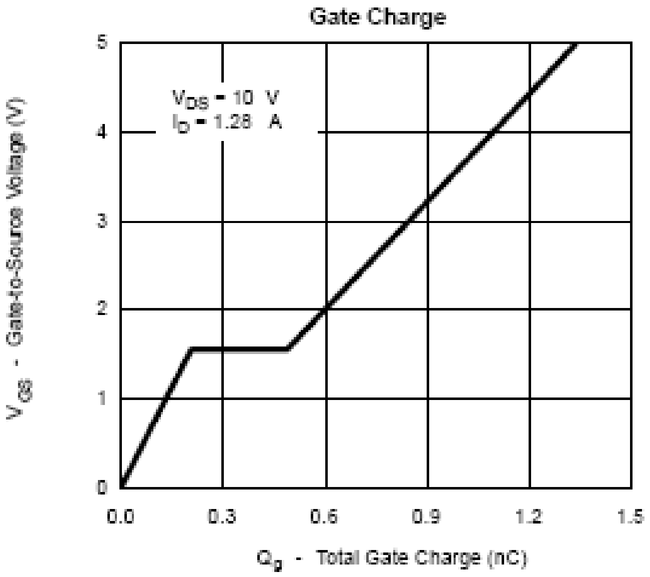

Output Characteristics

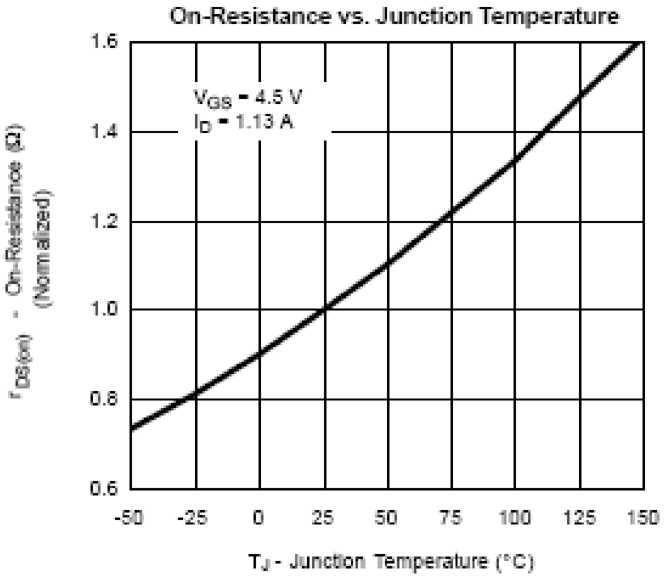

Transfer Characteristics

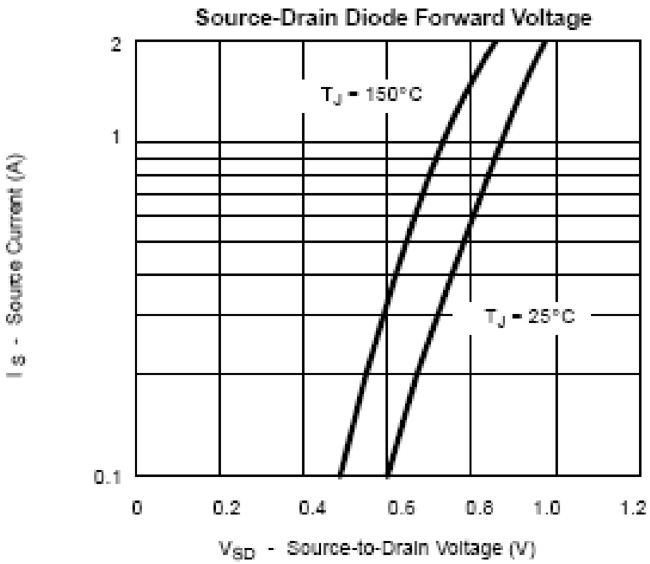

On-Resistance vs. Drain Current

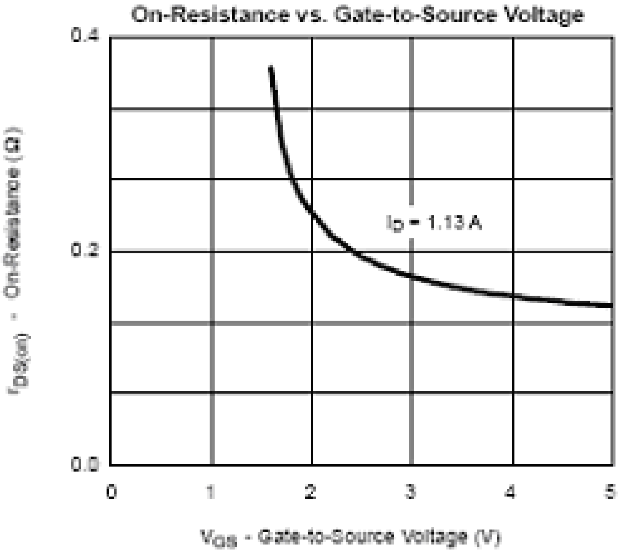

Capacitance

TYPICAL CHARACTERISTICS



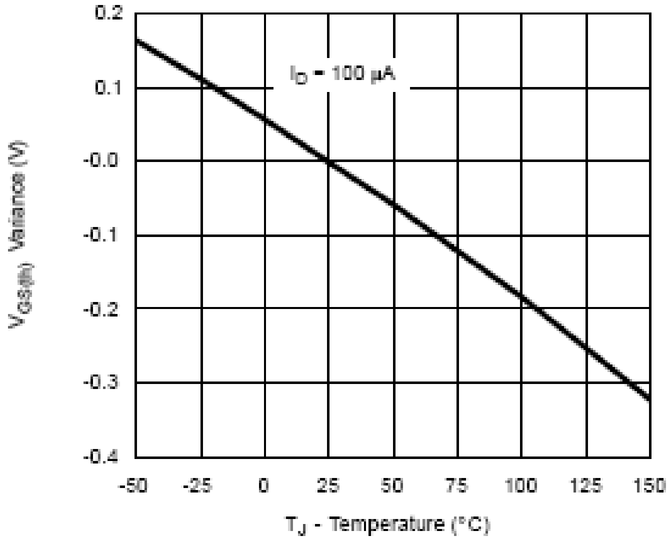




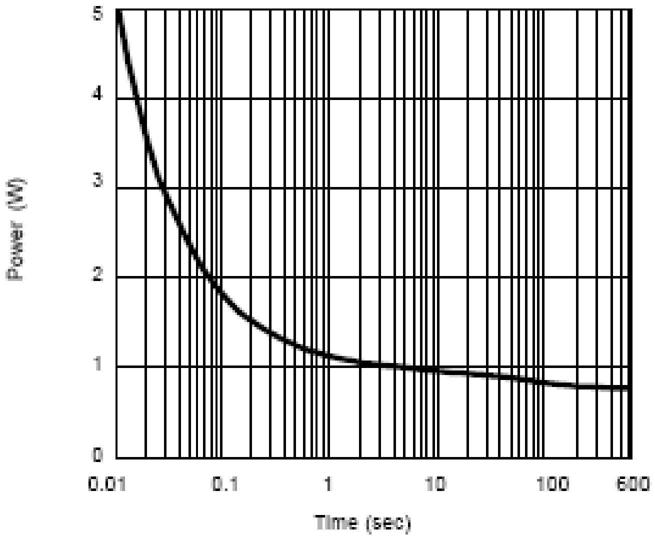


TYPICAL CHARACTERISTICS

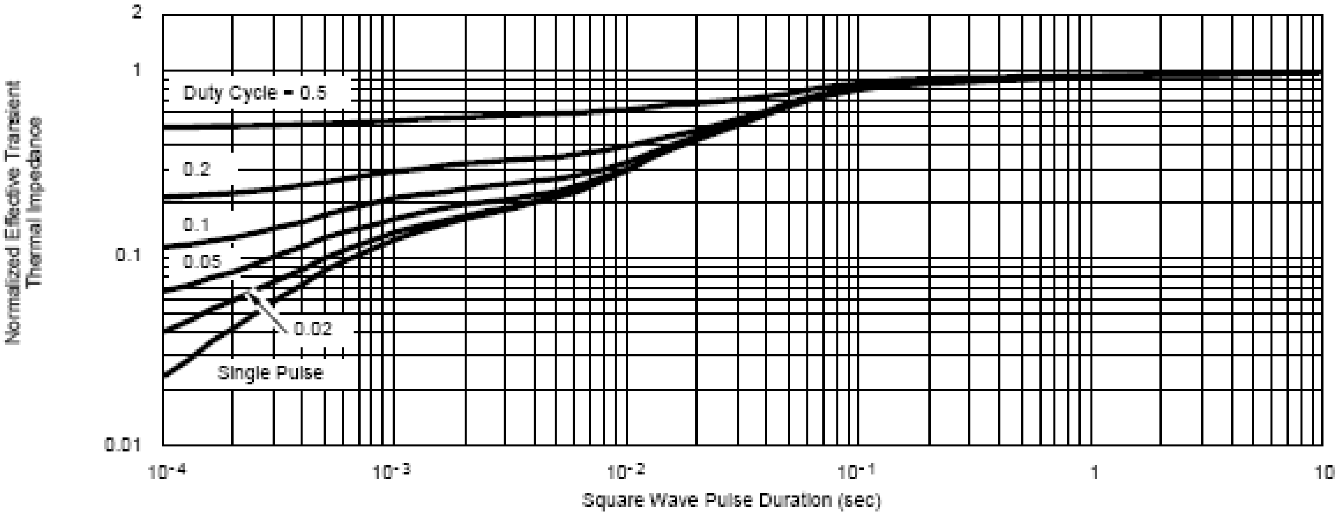
Threshold Voltage



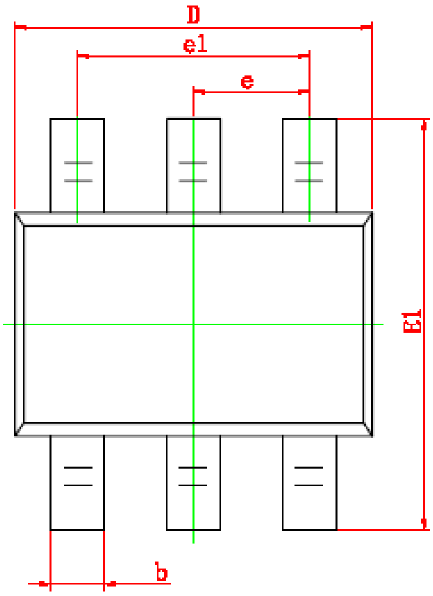
Single Pulse Power, Junction-to-Ambient

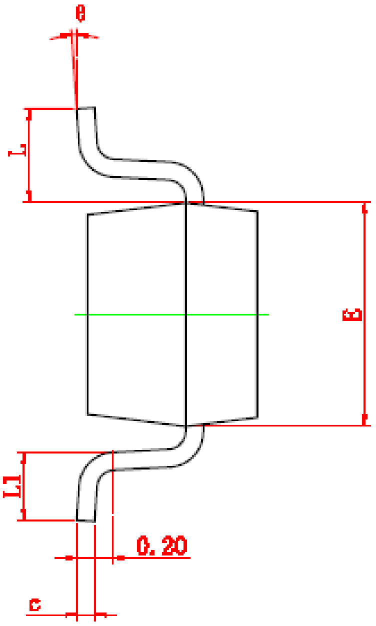


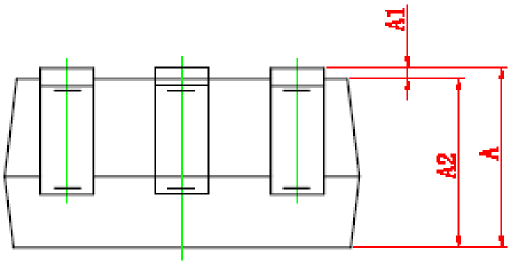
Normalized Thermal Transient Impedance, Junction-to-Foot



SOT-363 PACKAGE OUTLINE







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°