SSC8P20AN2

N-Channel Enhancement Mode MOSFET with PNP Transistor

➢ Features

N-Channel

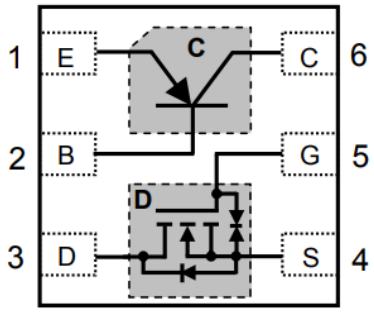
VDS	VGS	RDSON Typ.	ID
20V	±8V	255mR@4V5	0.8A
		390mR@2V5	

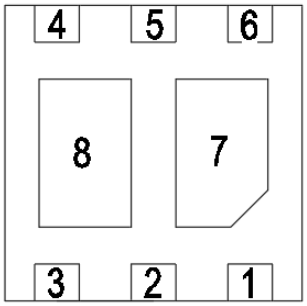
PNP Transistor

VCE	VBE	VCESAT Typ.	IC
-40V	-6V	-200mV	-1A

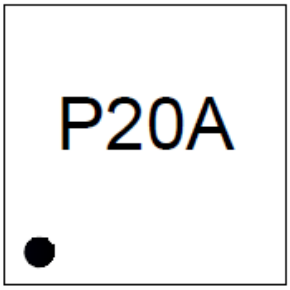
➢ Pin configuration

Top view





Bottom View



Marking

➢ Description

SSC8P20AN2 combines an N-Channel enhancement mode power MOSFET which is produced with high cell density and a Media Power PNP Transistor. The tiny and thin outline saves PCB consumption.

➢ Applications

- Li-Battery Charging
- Other power management in portable

➢ Ordering Information

Device	Package	Shipping
SSC8P20AN2	DFN2X2	3000/Reel

➢ **Absolute Maximum Ratings**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
N-MOS			
V_{DSS}	Drain-to-Source Voltage	20	V
V_{GSS}	Gate-to-Source Voltage	±8	V
I_D	Continuous Drain Current	0.8	A
I_{DM}	Pulsed Drain Current	3	A
PNP Transistor			
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-1	A
I_{CM}	Pulsed Collector Current	-2	A
Power Dissipation and Temperature			
P_D	Power Dissipation [a]	2.1	W
T_A	Operation Temperature Range	-40 to 85	℃
T_L	Lead Temperature	260	℃
T_J	Operation junction temperature	-55 to 150	℃
T_{STG}	Storage temperature range	-55 to 150	℃

➢ **Thermal Resistance Ratings**(T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]	57	℃/W

Note:

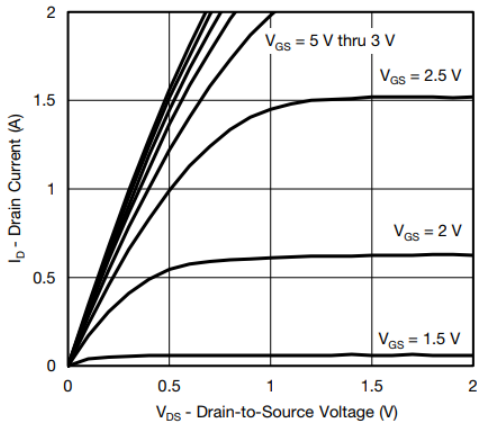
a. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The Power dissipation PD is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design, and the maximum temperature of 175°C may be used if the PCB allows it.

➢ **Electronics Characteristics**(T_A=25℃ unless otherwise noted)

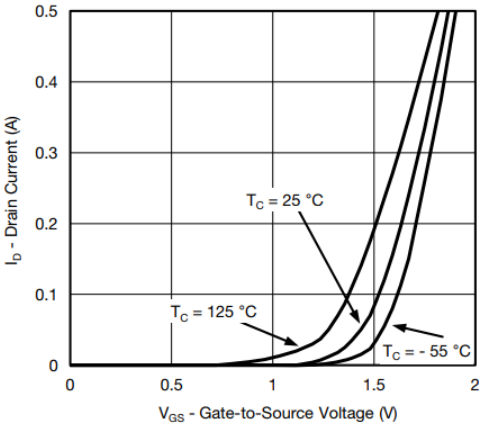
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
N-Channel Enhancement Mode MOSFET						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V , ID=250uA	20			V
$V_{GS\ (th)}$	Gate Threshold Voltage	VDS=VGS , ID=250uA	0.35	0.6	1	V
$R_{DS(on)}$	Drain-Source On-Resistance	VGS=4.5V , ID=0.5A		255	600	mR
		VGS=2.5V , ID=0.5A		390	850	
		VGS=1.8V , ID=0.35A		520	950	
I_{DSS}	Zero Gate Voltage Drain Current	VDS=16V , VGS=0V			1	uA
I_{GSS}	Gate-Source leak current	VGS=±8V , VDS=0V			±10	uA
V_{SD}	Forward Voltage	VGS=0V , IS=1A			1.3	V
G_{FS}	Transconductance	VDS=5V , ID=0.5A		2.2		S
Ciss	Input Capacitance	VDS=16V , VGS=0V, f=200KHZ		130		pF
Coss	Output Capacitance			20		
Crss	Reverse Transfer Capacitance			16		
$T_{D(ON)}$	Turn-on delay time	VDS=6V , VGS=4.5V, RL=6R , RG=6R , ID=0.8A		6		ns
Tr	Turn-on rise time			23		
$T_{D(OFF)}$	Turn-off delay time			42		
Tf	Turn-off fall time			78		

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
PNP Transistor						
BVCBO	Collector-Base Breakdown Voltage	IC=-50uA IE=0	-40			V
BVCEO	Collector-Emitter Breakdown Voltage	IC=-1mA IB=0	-40			V
BVEBO	Emitter-Base Breakdown Voltage	IE=-50uA IC=0	-6			V
ICBO	Collector cut off current	VCB=-20V IE=0			-0.1	uA
IEBO	Emitter cut off current	VEB=-4V IC=0			-0.1	uA
HFE	DC Current Gain	VCE=-2V IC=-0.5A	100		360	
VCESAT	Collector-Emitter Saturation Voltage	IC=-0.8A IB=-80mA		-0.2	-0.5	V
VBESAT	Base-Emitter Saturation Voltage	IC=-0.8A IB=-80mA			-1.2	V
f_T	Transition frequency	VCE=-6V, IE=-20mA f=30MHz	150			MHz

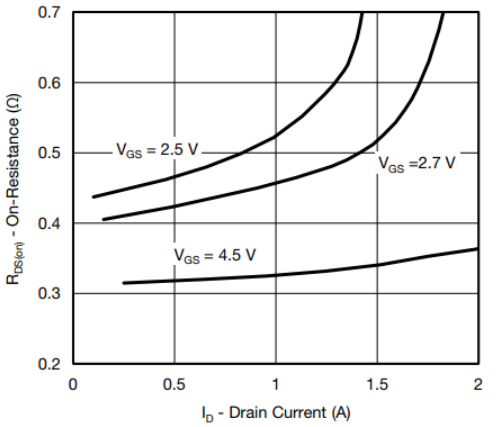
➢ N-Channel Typical Characteristics(T_A=25℃ unless otherwise noted)



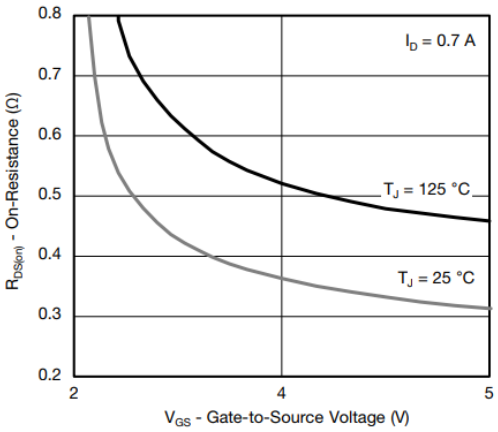
Output Characteristics



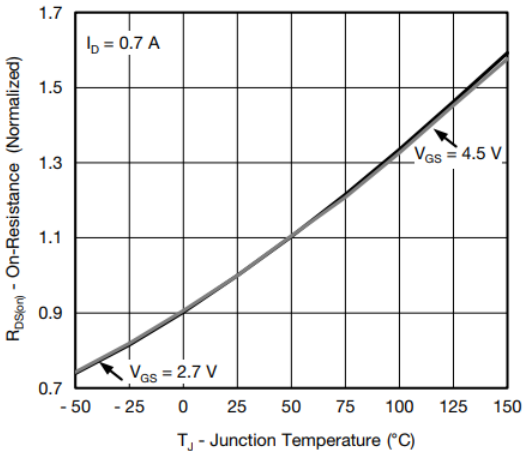
Transfer Characteristics



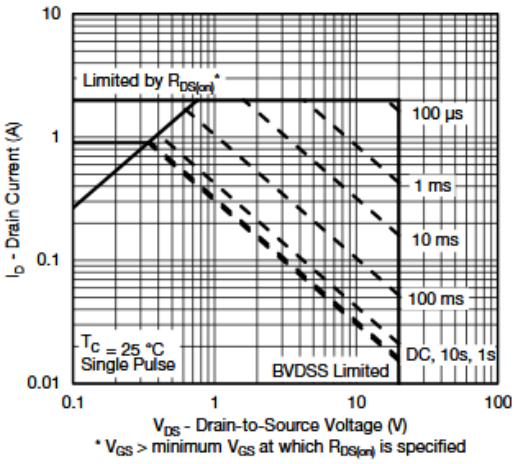
On-Resistance vs. Drain Current and Gate Voltage



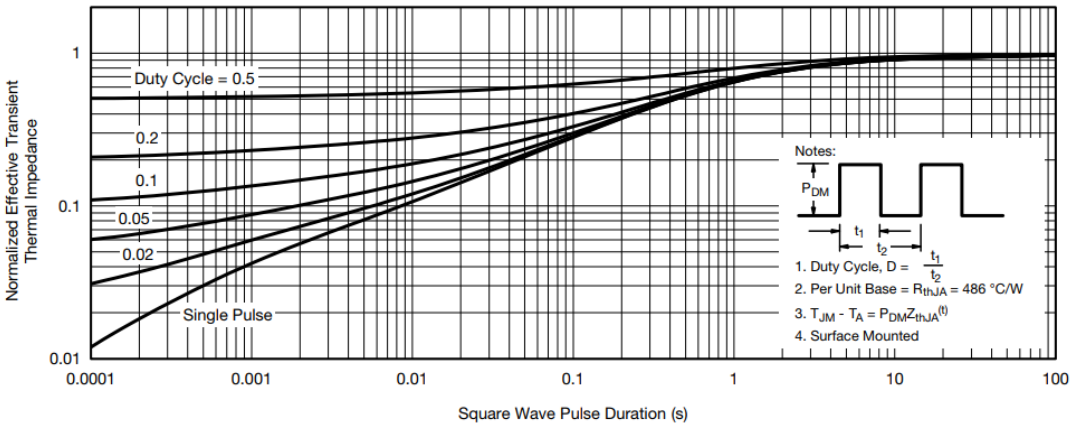
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Junction Temperature

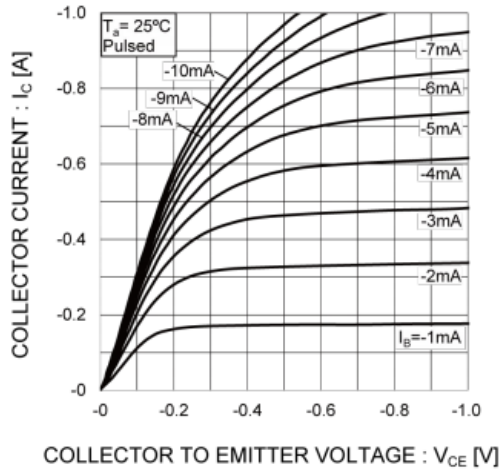


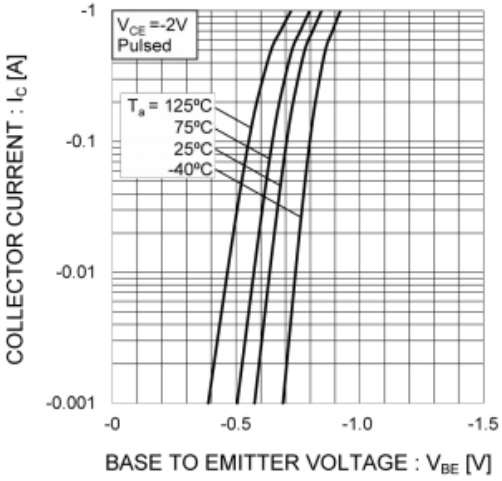
Safe Operating Area, Junction-to-Ambient

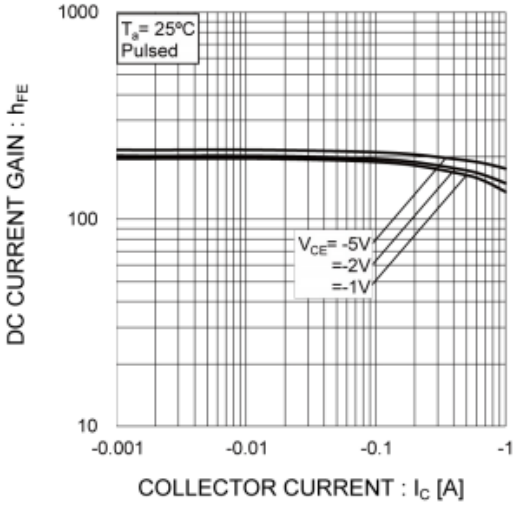


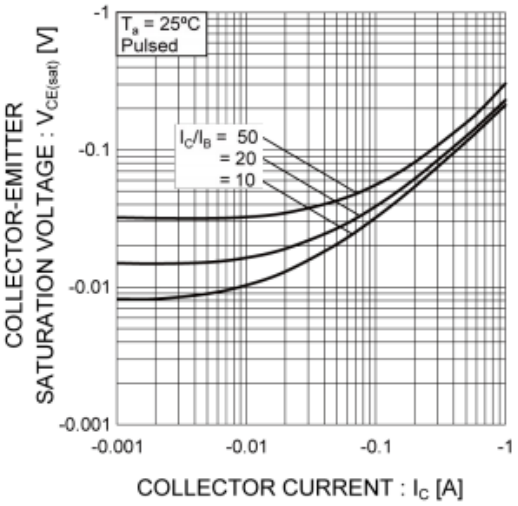
Normalized Thermal Transient Impedance, Junction-to-Ambient

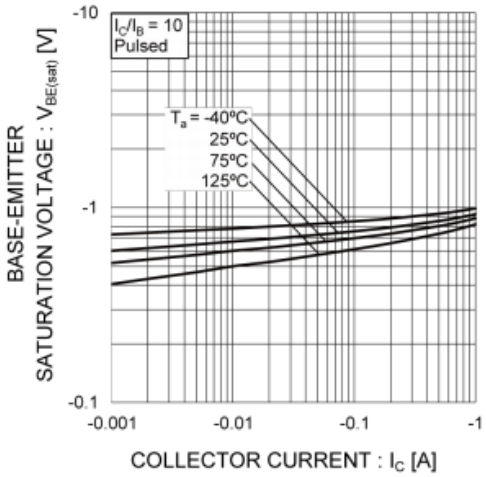
➢ PNP Transistor Typical Performance Characteristics

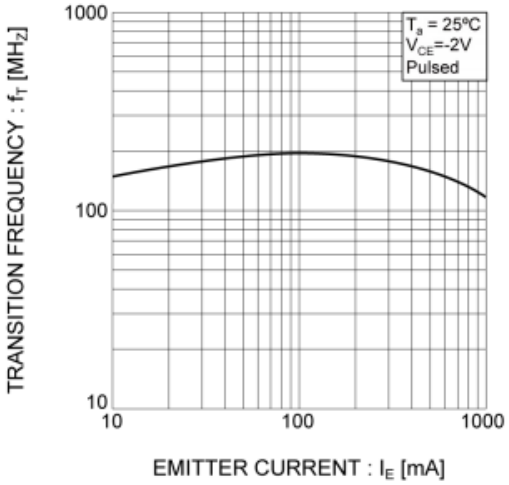




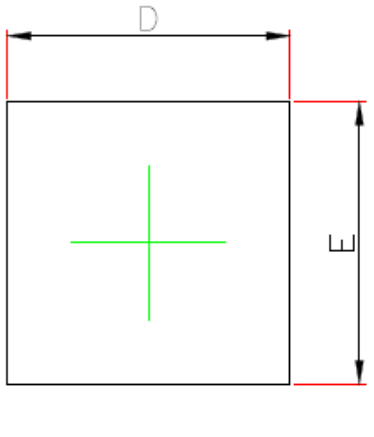




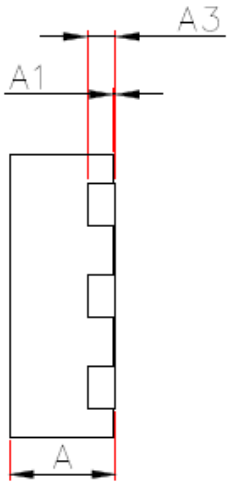




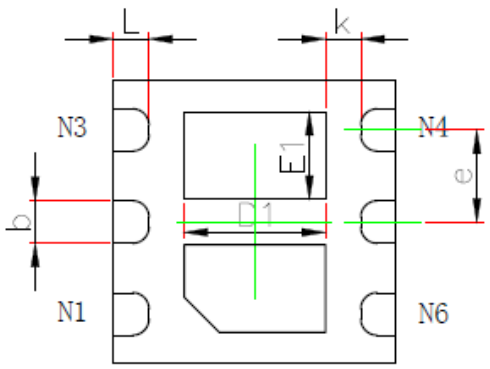
➢ Package Information



TOP VIEW



SIDE VIEW



BOTTOM VIEW

DFN2X2-8L

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
k	0.200MIN.		0.008MIN.	
L	0.200	0.300	0.008	0.012

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