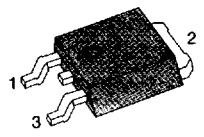
FEATURES

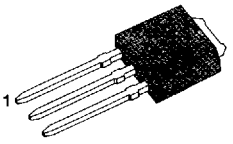
- Lower $R_{DS(ON)}$
- Excellent voltage stabillty
- Fast switching times
- Rugged polysilicon gate cell structure
- Lower input capacitance
- Extended safe operating area
- Improved high temperature reliability

D-PAK



1.Gate 2.Drain 3.Source
SSR1N60/55

I-PAK



1.Gate 2.Drain 3.Source
SSU1N60/55

PRODUCT SUMMARY

Part Number	V_{DS}	$R_{DS(on)}$	I_D
SSR1N60/U1N60	600V	12 Ω	1.0A
SSR1N55/U1N55	550V	12 Ω	1.0A

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ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	SSR1N60/U1N60	SSR1N55/U1N55	Unit
Drain-Source Voltage (1)	V_{DSS}	600	550	Vdc
Drain-Gate Voltage (R_{GS}=1.0MΩ)(1)	V_{DGR}	600	550	Vdc
Gate-Source Voltage	V_{GS}	±20		Vdc
Continuous Drain Current T_C=25 °C	I_D	1.0		Adc
Continuous Drain Current T_C=100 °C	I_D	0.7		Adc
Drain Current - Pulsed (3)	I_{DM}	3.0		Adc
Gate Current - Pulsed	I_{GM}	±1.5		Adc
Total Power Dissipation at T_C=25 °C	P_D	40		Watts
Derate above 25 °C		0.32		W/ °C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150		°C
Maximum Lead Temp. for Soldering Purposes, 1/8" from case for 5 seconds	T_L	300		°C

Notes : (1) T_J=25°C to 150°C
(2) Pulse test : Pulse width ≤ 300μs, Duty Cycle ≤ 2%
(3) Repetitive rating : Pulse width limited by max. junction temperature

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise specified)

Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage					
	SSR1N60/U1N60	600	-	-	V	V_{GS}=0V, I_D=250μA
	SSR1N55/U1N55	550	-	-	V	
$V_{GS(th)}$	Gate Threshold Voltage	2.0	-	4.0	V	V_{DS}=V_{GS}, I_D=250μA
I_{GSS}	Gate-Source Leakage Forward	-	-	100	nA	V_{GS}=20V
I_{GSS}	Gate-Source Leakage Reverse	-	-	-100	nA	V_{GS}=-20V
I_{DSS}	Zero Gate Voltage Drain Current	-	-	250	μA	V_{DS}=Max. Rating, V_{GS}=0V
		-	-	1000	μA	V_{DS}=0.8 Max. Rating, V_{GS}=0V, T_C=125°C
$R_{DS(on)}$	Static Drain-Source On Resistance (2)	-	-	12	Ω	V_{GS}=10V, I_D=0.5A
g_{fs}	Forward Transconductance (2)	0.5	-	-	℧	V_{DS}≥50V, I_D=0.5A
C_{iss}	Input Capacitance	-	250	300	pF	V_{GS}=0V, V_{DS}=25V, f=1.0MHz
C_{oss}	Output Capacitance	-	25	50	pF	
C_{rss}	Reverse Transfer Capacitance	-	10	20	pF	
$t_{d(on)}$	Turn-On Delay Time	-	12	20	ns	V_{DD}=0.5 BV_{DSS}, I_D=1.0A, Z_O=24 Ω
t_r	Rise Time	-	4	15	ns	(MOSFET switching times are essentially
$t_{d(off)}$	Turn-Off Delay Time	-	30	60	ns	independent of operating temperature)
t_f	Fall Time	-	10	30	ns	
Q_g	Total Gate Charge (Gate-Source Pluse Gate-Drain)	-	-	21	nC	V_{GS}=10V, I_D=1.0A, V_{DS}=0.8 Max. Rating (Gate charge is essentially independent of operating temperature)
Q_{gs}	Gate-Source Charge	-	3	-	nC	
Q_{gd}	Gate-Drain ("Miller") Charge	-	9	-	nC	

THERMAL RESISTANCE

Symbol	Characteristics		All	Units	Remark
R_{thJC}	Junction-to-Case	MAX	3.125	K/W	
R_{thCS}	Case-to-Sink	TYP	1.7	K/W	Mounting surface flat, smooth and greased
R_{thJA}	Junction-to-Ambient	MAX	110	K/W	Free Air Operation

Notes : (1) T_J=25°C to 150°C
(2) Pulse test : Pulse width≤300μs, Duty Cycle≤2%
(3) Repetitive rating : Pulse width limited by max. junction temperature