

**SE7401P**  
**20V P-Channel Enhancement-Mode MOSFET**

Revision:B

**General Description**

The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

**General Description**

Thigh Density Cell Design For Ultra Low On-Resistance Fully Characterized Avalanche Voltage and Current Improved Shoot-Through FOM

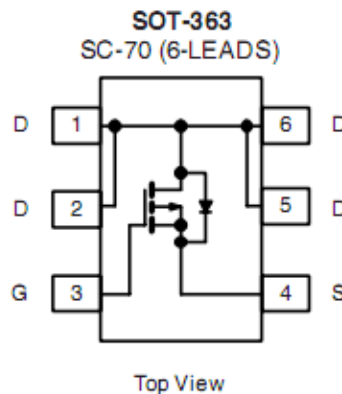
- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device
- Pb-Free package is available

**Features**

For a single mosfet

- $V_{DS} = -20\text{ V}$
- $R_{DS(ON)} = 120\text{m}\Omega @ V_{GS}=-4.50\text{V} @ I_{ds}=-2.0\text{A}$
- $R_{DS(ON)} = 150\text{m}\Omega @ V_{GS}=-2.50\text{V} @ I_{ds}=-1.8\text{A}$
- $R_{DS(ON)} = 170\text{m}\Omega @ V_{GS}=-1.80\text{V} @ I_{ds}=-1.8\text{A}$

**Pin configurations**



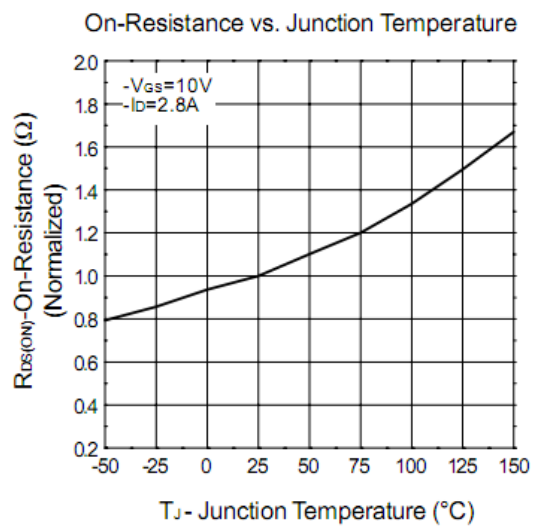
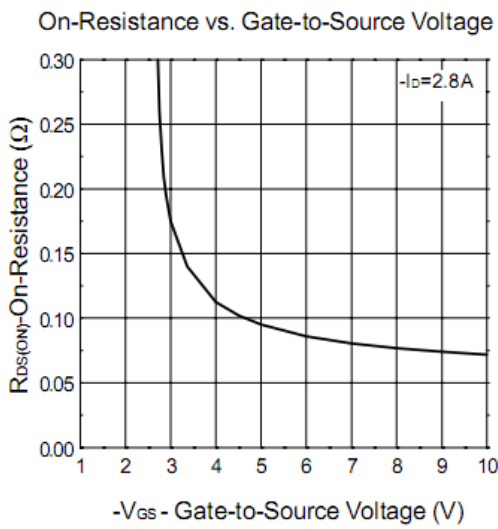
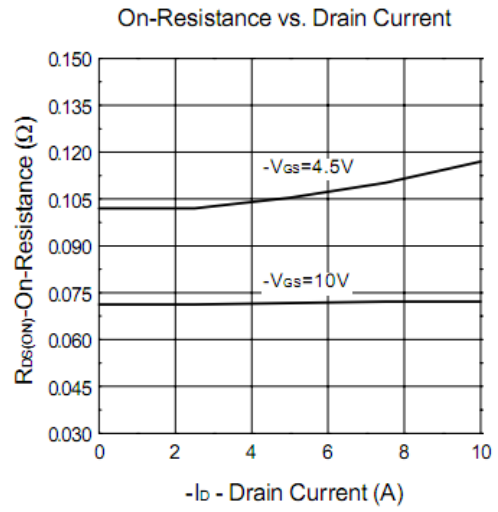
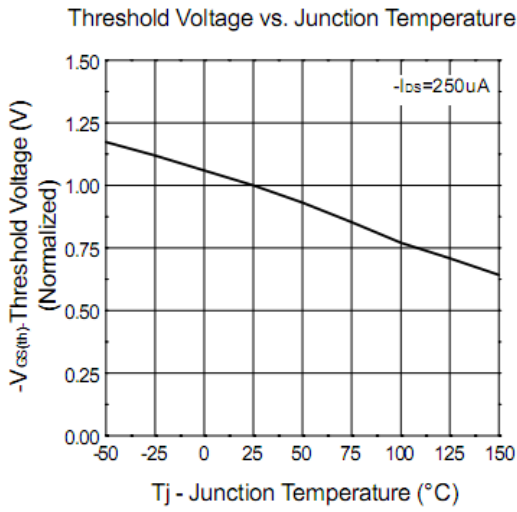
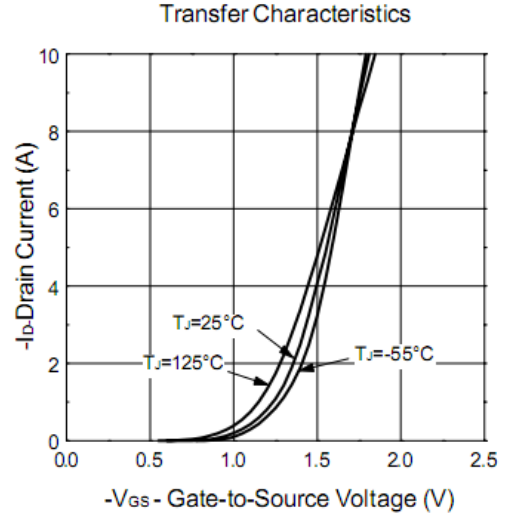
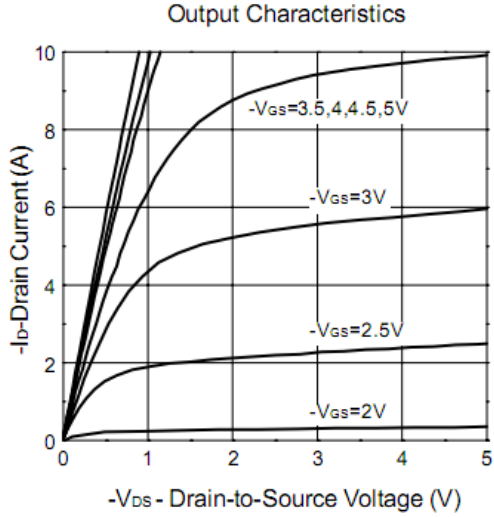
**Absolute Maximum Ratings**

Parameter		Symbol	Rating	Units
Drain-Source Voltage		$V_{DS}$	-20	V
Gate-Source Voltage		$V_{GS}$	$\pm 8$	V
Drain Current (Note 1)	Continuous	$I_D$	-2.2	A
	Pulsed		-7	
Total Power Dissipation	@ $T_A=25^\circ\text{C}$	$P_D$	0.9	W
	@ $T_A=75^\circ\text{C}$		0.57	
Operating Junction Temperature Range		$T_J$	-55 to 150	$^\circ\text{C}$

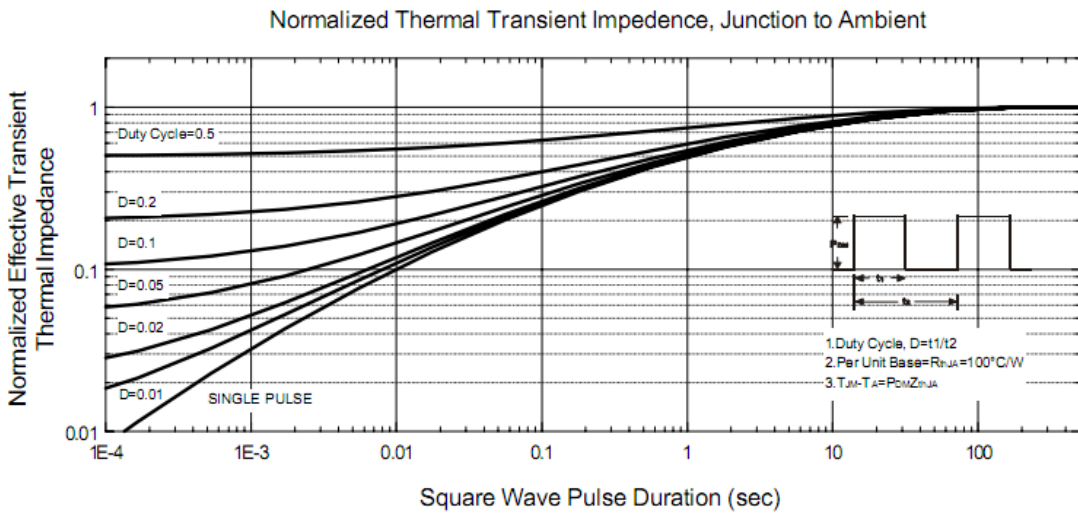
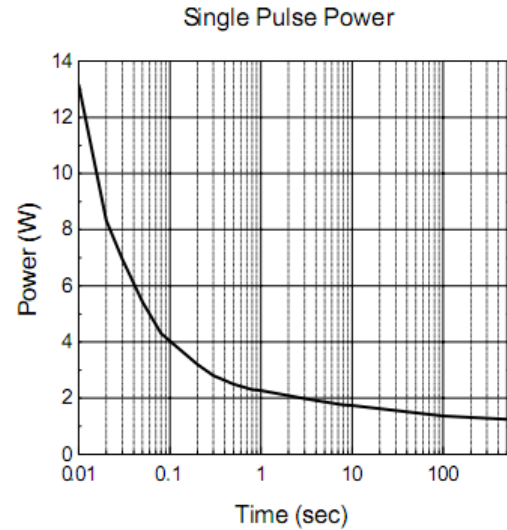
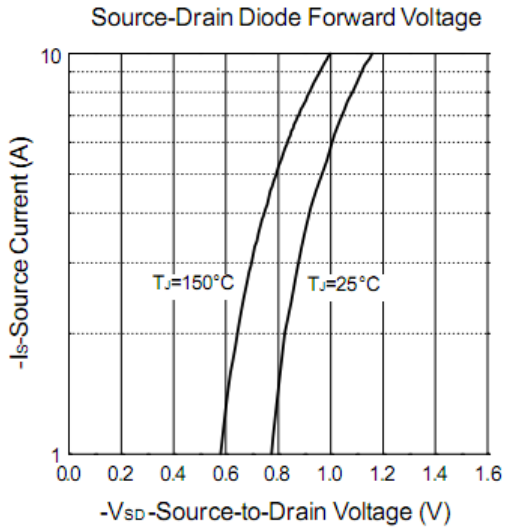
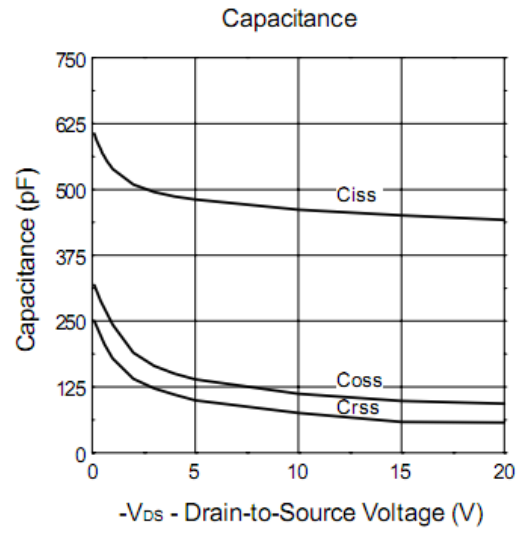
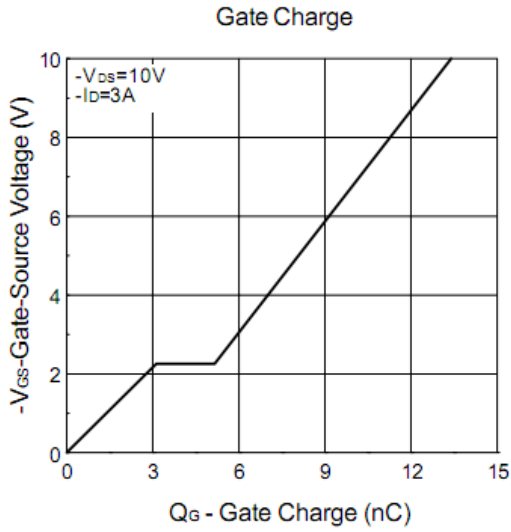
# SE7401P

Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS (Note 2)</b>						
B <sub>V</sub> DSS	Drain-Source Breakdown Voltage	I <sub>D</sub> =-250 μ A, V <sub>GS</sub> =0 V	-20			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =20 V, V <sub>GS</sub> =0 V			-1	μ A
I <sub>GSS</sub>	Gate-Body leakage current	V <sub>DS</sub> =0 V, V <sub>GS</sub> =±10 V			±0.1	μ A
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μ A	-0.4		-0.9	V
R <sub>DS(on)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.0 A	-	100	120	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-1.8A	-	120	150	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1.8A		140	170	
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =5V, I <sub>D</sub> =2A		6.5		S
<b>DYNAMIC PARAMETERS</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =10V, f=1MHz		373		pF
C <sub>oss</sub>	Output Capacitance			138		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			52		pF
<b>SWITCHING PARAMETERS</b>						
Q <sub>g</sub>	Total Gate Charge <sup>2</sup>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-6V, I <sub>D</sub> =-2.0A		15.2		nC
Q <sub>gs</sub>	Gate Source Charge			5.5		nC
Q <sub>gd</sub>	Gate Drain Charge			2.7		nC
t <sub>d(on)</sub>	Turn-On DelayTime <sup>2</sup>	V <sub>GS</sub> =-4.5V, V <sub>DD</sub> =-6V, R <sub>L</sub> =6 Ω, R <sub>G</sub> =6 Ω I <sub>D</sub> =-1A			17.3	ns
t <sub>d(off)</sub>	Turn-Off DelayTime				36.0	
t <sub>d(r)</sub>	Turn-On Rise Time				3.7	
t <sub>d(f)</sub>	Turn-Off Fall Time				3.2	

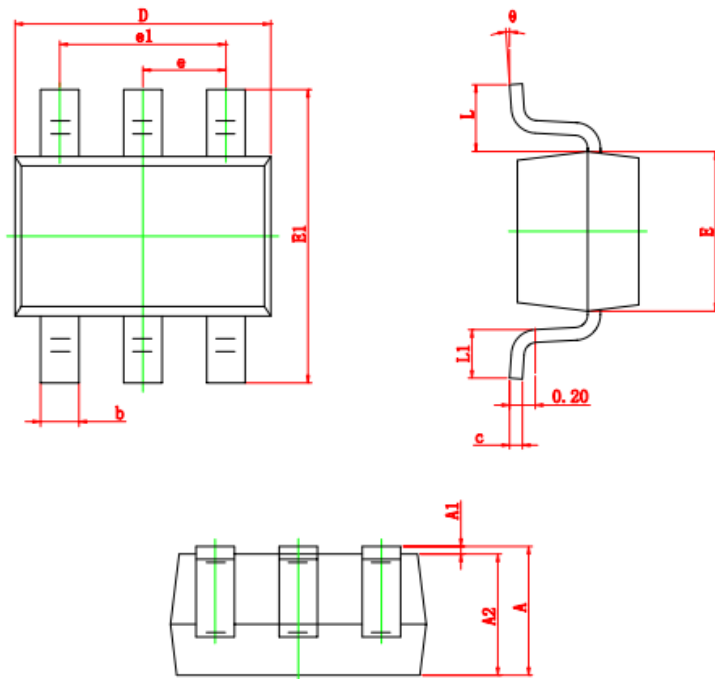
Typical Characteristics



Typical Characteristics



## Packaging Information(SOT363)



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
$\theta$	0°	8°	0°	8°

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