

## **Maximum Ratings** ( $@T_A = +25^{\circ}C$ , unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			$V_{DSS}$	60	V
Drain-Gate Voltage $R_{GS} \le 1.0M\Omega$			$V_{DGR}$	60	V
Cata Saurea Valtaga	Continuous		V <sub>GSS</sub>	±20	V
Gate-Source Voltage	Pulsed		V <sub>GSS</sub>	±40	V
Continuous Drain Current (Note 7) V <sub>GS</sub> = 5V	Steady State	$T_A = +25^{\circ}C$ $T_A = +70^{\circ}C$ $T_A = +100^{\circ}C$	I <sub>D</sub>	0.23 0.18 0.14	А
Maximum Continuous Body Diode Forward Current (Note 7)			Is	0.53	Α
Pulsed Drain Current (10µs Pulse, Duty Cycle = 1%	I <sub>DM</sub>	0.8	А		

# Thermal Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit	
	T <sub>A</sub> = +25°C		0.31		
Total Power Dissipation (Note 6)	T <sub>A</sub> = +70°C	$P_{D}$	0.2	W	
	T <sub>A</sub> = +100°C		0.12		
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	$R_{ heta JA}$	410	°C/W	
	T <sub>A</sub> = +25°C		0.4		
Total Power Dissipation (Note 7)	T <sub>A</sub> = +70°C	$P_{D}$	0.25	W	
	T <sub>A</sub> = +100°C		0.15		
Thermal Resistance, Junction to Ambient (Note 7)	Steady State	$R_{ heta JA}$	318	°C/W	
Thermal Resistance, Junction to Case (Note 7)	Steady State	$R_{ heta JC}$	135	°C/W	
Operating and Storage Temperature Range	·	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C	

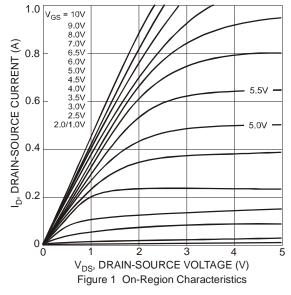
## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Тур	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 8)			I.		l	l .		
Drain-Source Breakdown Voltage		BV <sub>DSS</sub>	60	70	_	V	$V_{GS} = 0V, I_D = 10\mu A$	
Zero Gate Voltage Drain Current	@ T <sub>C</sub> = +25°C @ T <sub>C</sub> = +125°C	I <sub>DSS</sub>	_	_	1.0 500	μΑ	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V	
Gate-Body Leakage		I <sub>GSS</sub>	_	_	±10	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$	
ON CHARACTERISTICS (Note 8)								
Gate Threshold Voltage		V <sub>GS(TH)</sub>	1.0	_	2.0	V	$V_{DS} = V_{GS}, I_D = 250 \mu A$	
Static Drain-Source On-Resistance	@ T <sub>J</sub> = +25°C @ T <sub>J</sub> = +125°C	R <sub>DS(ON)</sub>	_	3.2 4.4	7.5 13.5	Ω	$V_{GS} = 5.0V, I_D = 0.05A$ $V_{GS} = 10V, I_D = 0.5A$	
On-State Drain Current	@ 1j=1125 O	I <sub>D(ON)</sub>	0.5	1.0	—	Α	$V_{GS} = 10V, V_{DS} = 7.5V$	
Forward Transconductance		g <sub>FS</sub>	80	_	_	mS	$V_{DS} = 10V, I_D = 0.2A$	
Diode Forward Voltage		$V_{SD}$	_	0.78	1.5	V	$V_{GS} = 0V, I_{S} = 115mA$	
DYNAMIC CHARACTERISTICS (Note 9)								
Input Capacitance		C <sub>iss</sub>	_	22	50	pF	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V f = 1.0MHz	
Output Capacitance		Coss	_	11	25	pF		
Reverse Transfer Capacitance		C <sub>rss</sub>	_	2.0	5.0	pF		
SWITCHING CHARACTERISTICS (Note 9)								
Turn-On Delay Time		t <sub>D(ON)</sub>	_	7.0	20		$V_{DD} = 30V, I_D = 0.2A,$	
Turn-Off Delay Time		t <sub>D(OFF)</sub>	_	11.0	20	ns	$R_L = 150\Omega$ , $V_{GEN} = 10V$ , $R_{GEN} = 25\Omega$	

Notes:

<sup>6.</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
7. Device mounted on FR-4 substrate PC board, 2oz copper, with thermal vias to bottom layer 1inch square copper plate.
8. Short duration pulse test used to minimize self-heating effect.
9. Guaranteed by design. Not subject to product testing.





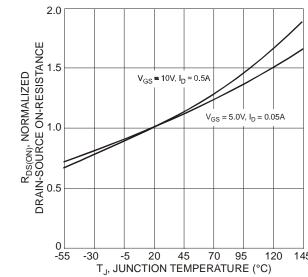
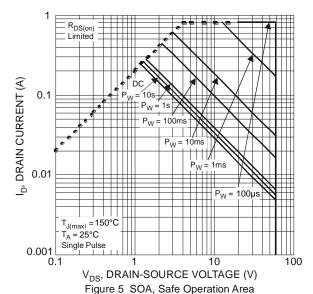


Figure 3 On-Resistance vs. Junction Temperature



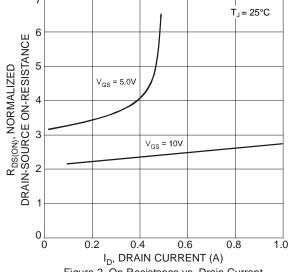
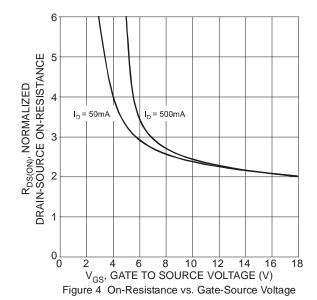


Figure 2 On-Resistance vs. Drain Current



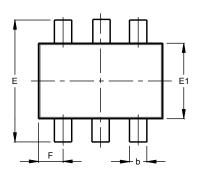
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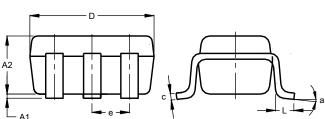


### **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### **SOT363**



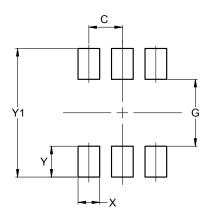


SOT363					
Dim	Min	Max	Тур		
A1	0.00	0.10	0.05		
A2	0.90	1.00	1.00		
b	0.10	0.30	0.25		
C	0.10	0.22	0.11		
D	1.80	2.20	2.15		
Е	2.00	2.20	2.10		
E1	1.15	1.35	1.30		
е	0.650 BSC				
F	0.40	0.45	0.425		
L	0.25	0.40	0.30		
а	0°	8°			
All Dimensions in mm					

## **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### SOT363



Dimensions	Value (in mm)		
С	0.650		
G	1.300		
Х	0.420		
Y	0.600		
Y1	2 500		



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