

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-60V	6Ω@-10V	-0.13A
	7Ω@-4.5V	

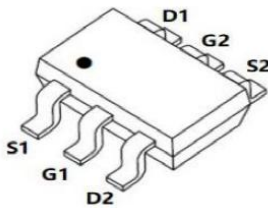
Feature

- Energy Efficient
- Low Threshold Voltage
- High-speed Switching
- Miniature Surface Mount Package Saves Board Space

Application

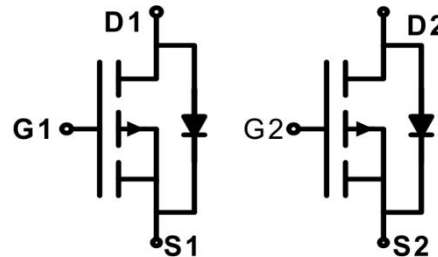
- DC-DC converters
- load switching
- power management in portable
- battery-powered products

Package

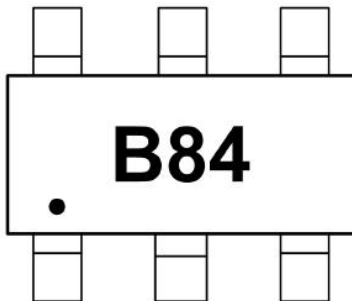


SOT-363

Circuit diagram



Marking



Absolute maximum ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	-0.13	A
Pulsed Drain Current ¹⁾ @ tp<10μs	I _{DM}	-0.52	A
Power Dissipation	P _D	0.2	W
Thermal Resistance from Junction to Ambient ²⁾	R _{θJA}	625	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

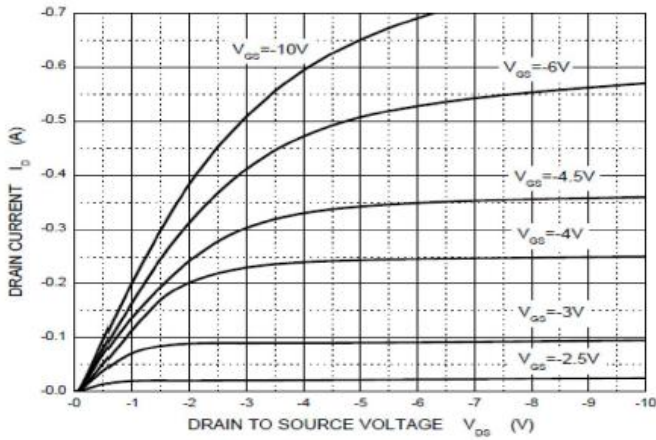
Electrical characteristics (T_J=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ³⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.8	-1.5	-2.5	V
Drain-source on-resistance ³⁾	R _{DS(on)}	V _{GS} = -10V, I _D = -0.15A		4.2	6	Ω
		V _{GS} = -4.5V, I _D = -0.15A		4.5	7	
Dynamic characteristics⁴⁾						
Input Capacitance	C _{iss}	V _{DS} = -5V, V _{GS} = 0V, f = 1MHz		40		pF
Output Capacitance	C _{oss}			3		
Reverse Transfer Capacitance	C _{rss}			2		
Turn-on delay time	t _{d(on)}	V _{DD} = -30V, R _G = 2.5Ω, I _D = -0.15A		8.5		nS
Turn-on rise time	t _r			21		
Turn-off delay time	t _{d(off)}			16		
Turn-off fall time	t _f			78		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{SD}	V _{GS} = 0V, I _S = -0.5A			-1.3	V

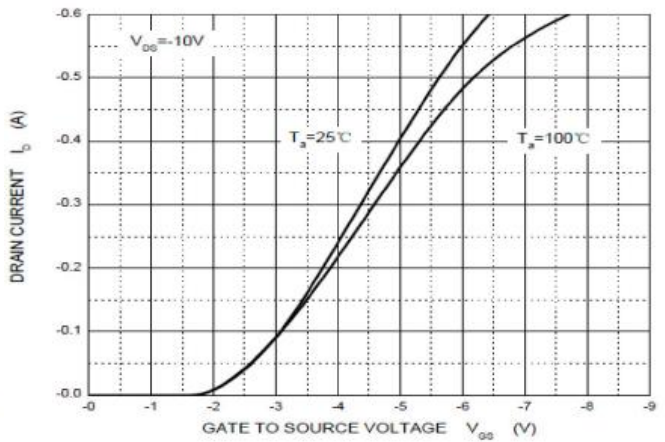
Notes:

- 1) Repetitive rating: Pulse width limited by junction temperature.
- 2) Surface mounted on FR4 board, t ≤ 10s.
- 3) Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
- 4) Guaranteed by design, not subject to production.

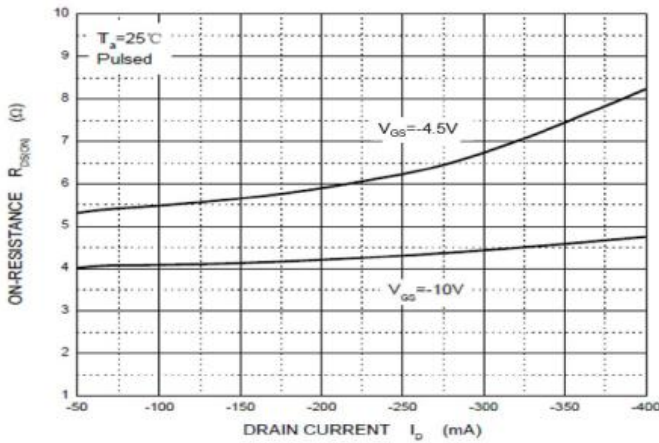
Typical Characteristics



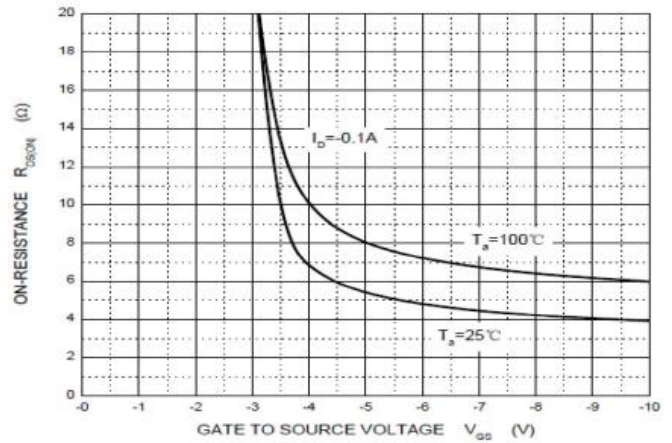
Output Characteristics



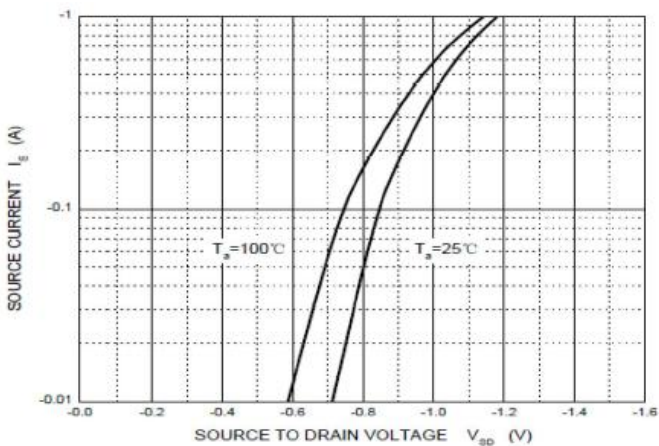
Transfer Characteristics



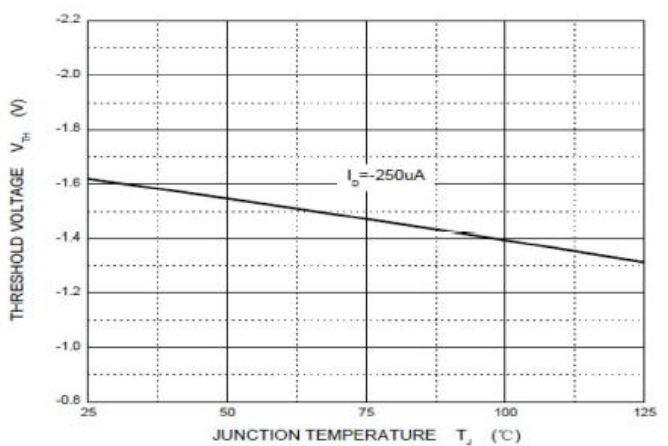
Drain-Source on Resistance



Drain-Source on Resistance

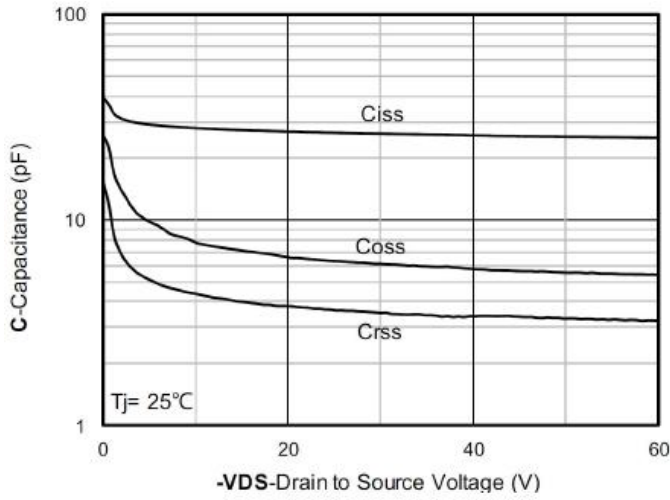


Diode Forward Voltage vs. current

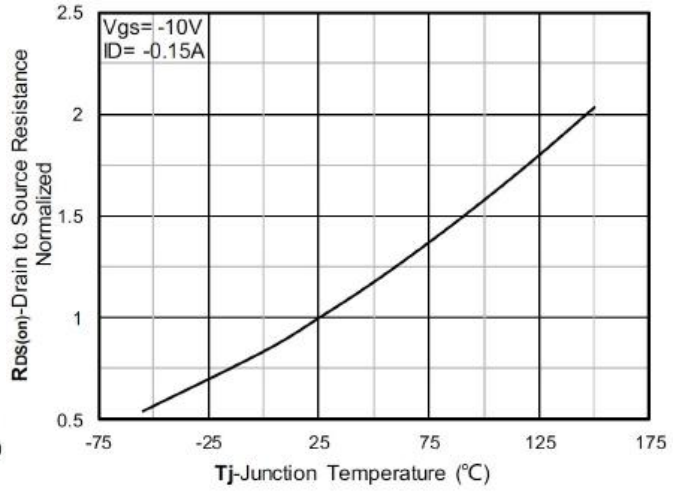


Gate Threshold vs. Junction Temperature

Typical Characteristics

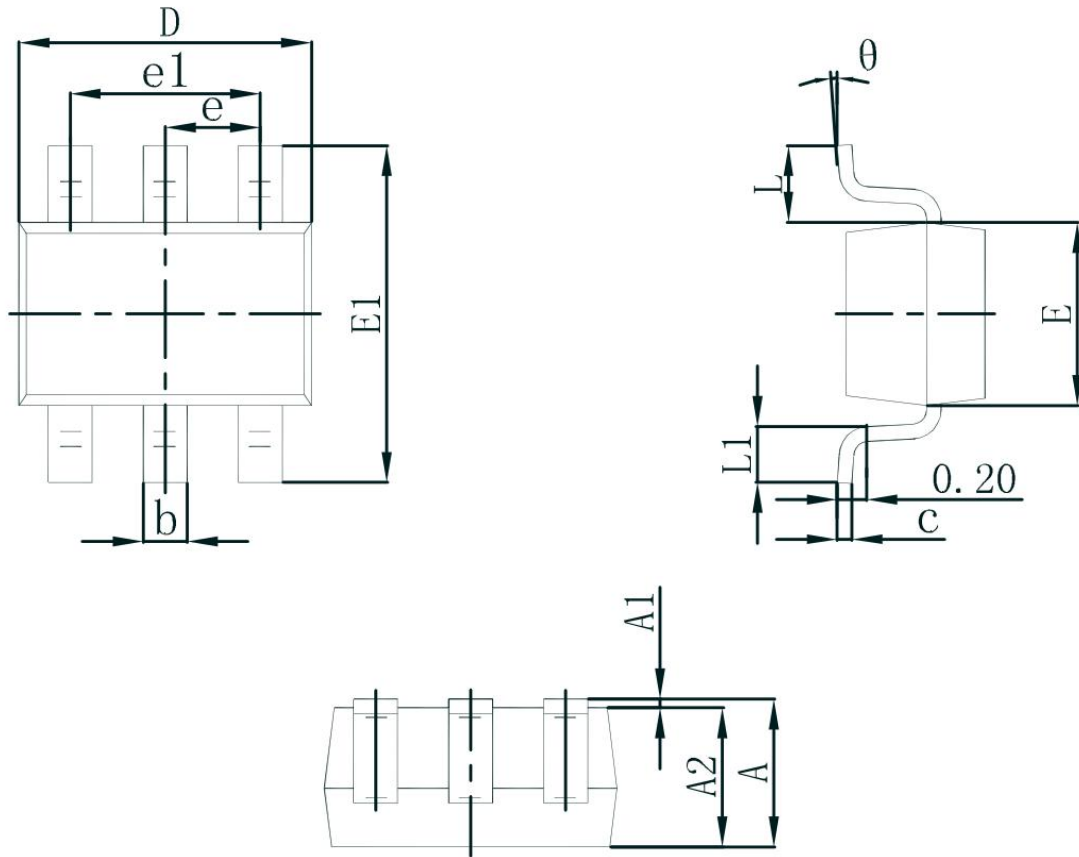


Capacitance Characteristics



Normalized On-Resistance

SOT-363 Package Information



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	0.100	0.350	0.004	0.014
c	0.100	0.250	0.004	0.010
D	1.800	2.200	0.071	0.087
E	1.150	1.350	0.045	0.053
E1	2.000	2.450	0.078	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	0.150	0.460	0.006	0.018
θ	0°	8°	0°	8°