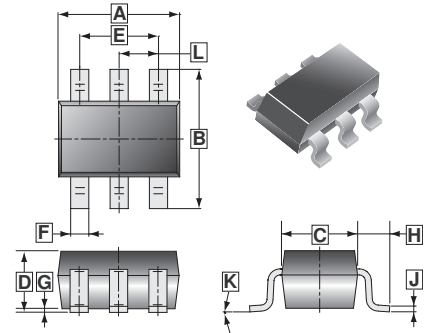


RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

FEATURES

- 20V/760mA
 $R_{DS(ON)} \leq 450m\Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} \leq 650m\Omega @ V_{GS}=2.5V$
 $R_{DS(ON)} \leq 1300m\Omega @ V_{GS}=1.8V$
- Reliable and Rugged
- Green Device Available
- ESD Protection

SOT-363



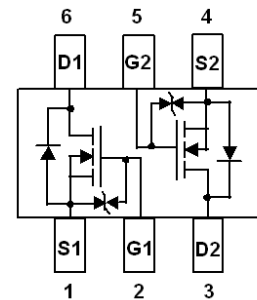
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	8°	
E	1.10	1.50	L	0.650 TYP.	
F	0.10	0.35			

MARKING

20K

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-363	3K	7 inch



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current @ $V_{GS}=4.5V$ ¹	I_D	$T_A=25^\circ C$	0.76
		$T_A=85^\circ C$	0.55
Pulsed Drain Current ³	I_{DM}	3	A
Power Dissipation	P_D	300	mW
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^\circ C$
Thermal Data			
Maximum Junction to Ambient ¹	$R_{\theta JA}$	417	$^\circ C / W$
Maximum Junction to Ambient ²		625	$^\circ C / W$
Maximum Junction to Case	$R_{\theta JC}$	300	$^\circ C / W$

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

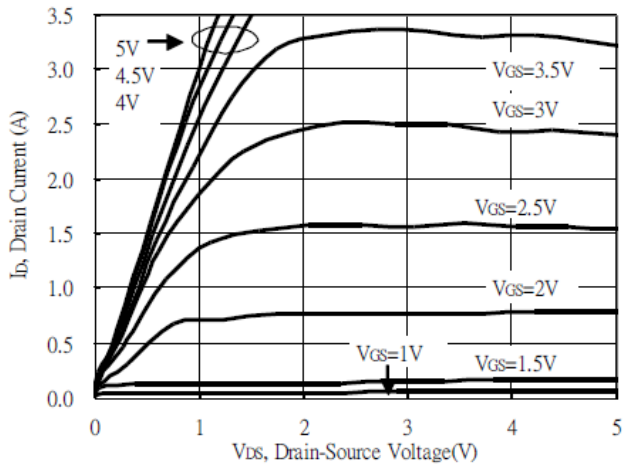
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Drain-Source Breakdown Voltage	BV _{DSS}	20	-	-	V	I _D =250uA, V _{GS} =0
Gate-Threshold Voltage	V _{GS(th)}	0.45	-	1.2	V	V _{DS} =V _{GS} , I _D =250uA
Gate-Source Leakage Current	I _{GSS}	-	-	±10	uA	V _{GS} =±10V
Drain-Source Leakage Current	I _{DSS}	-	-	1	uA	V _{DS} =20V, V _{GS} =0, T _J =25°C
Drain-Source Leakage Current	I _{DSS}	-	-	10	uA	V _{DS} =16V, V _{GS} =0, T _J =70°C
Drain-Source On-Resistance ⁴	R _{DS(ON)}	-	-	450	mΩ	V _{GS} =4.5V, I _D =600mA
		-	-	650		V _{GS} =2.5V, I _D =400mA
		-	-	1300		V _{GS} =1.8V, I _D =350mA
Total Gate Charge	Q _g	-	1.3	-	nC	I _{DS} =0.6A, V _{DS} =16V, V _{GS} =4.5V
Gate-Source Charge	Q _{gs}	-	0.3	-		
Gate-Drain ("Miller") Charge	Q _{gd}	-	0.5	-		
Turn-on Delay Time	T _{d(on)}	-	4	-	nS	V _{DD} =10V, V _{GS} =10V, I _{DS} =0.6A, R _{GEN} =3.3Ω
Rise Time	T _r	-	10	-		
Turn-off Delay Time	T _{d(off)}	-	15	-		
Fall Time	T _f	-	2	-		
Input Capacitance	C _{ISS}	-	60	-	pF	V _{DS} =10V, V _{GS} =0, f=1MHz
Output Capacitance	C _{OSS}	-	14	-		
Reverse Transfer Capacitance	C _{RSS}	-	9	-		
Source-Drain Diode						
Continuous Source Current ¹	I _S	-	-	0.76	A	
Pulsed Source Current ³	I _{SM}	-	-	3	A	
Diode Forward Voltage ⁴	V _{SD}	-	-	1.2	V	I _S =500mA, V _{GS} =0V
Reverse Recovery Time	t _{rr}	-	4.9	-	nS	I _F =0.5A , dI/dt=100A/μs , T _J =25°C
Reverse Recovery Charge	Q _{rr}	-	1.0	-	nC	

Notes:

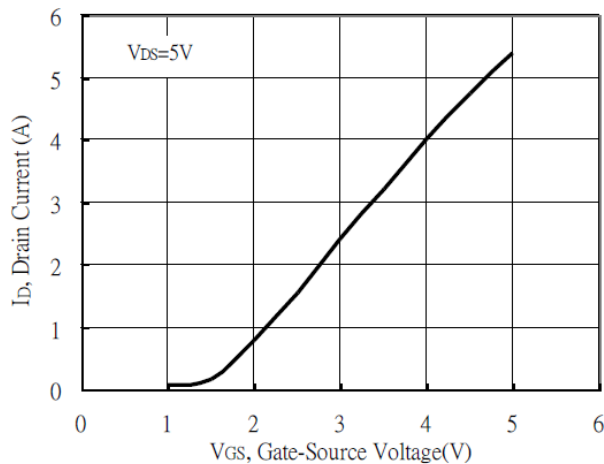
1. Surface mounted on a 1 inch² FR-4 board with 2OZ copper, t ≤ 10 sec
2. Surface mounted on FR4 board
3. Pulse width limited by maximum junction temperature, Pw ≤ 300μs, Duty cycle ≤ 1%
4. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%

CHARACTERISTIC CURVES

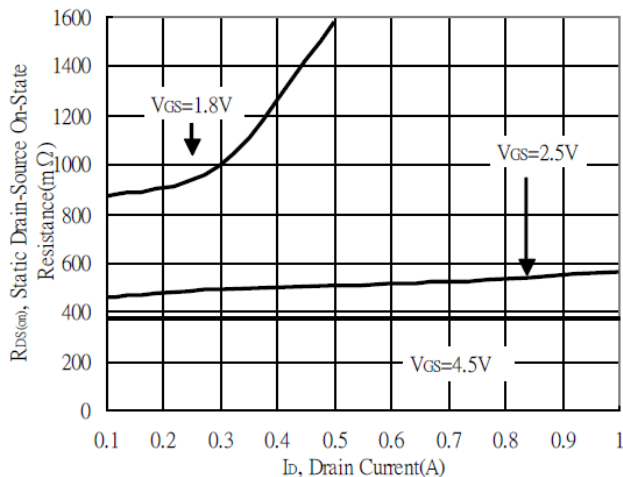
Typical Output Characteristics



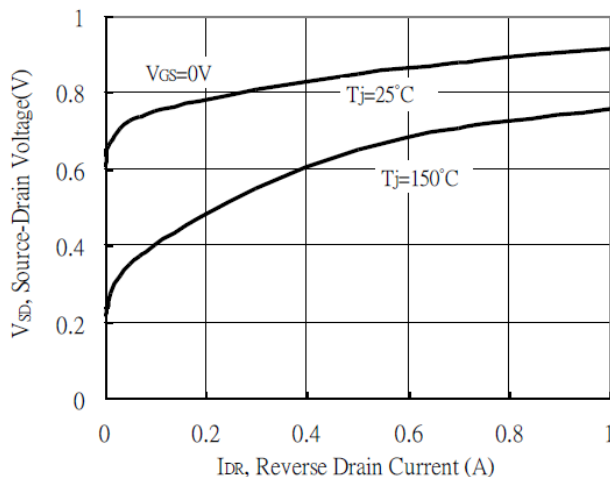
Typical Transfer Characteristics



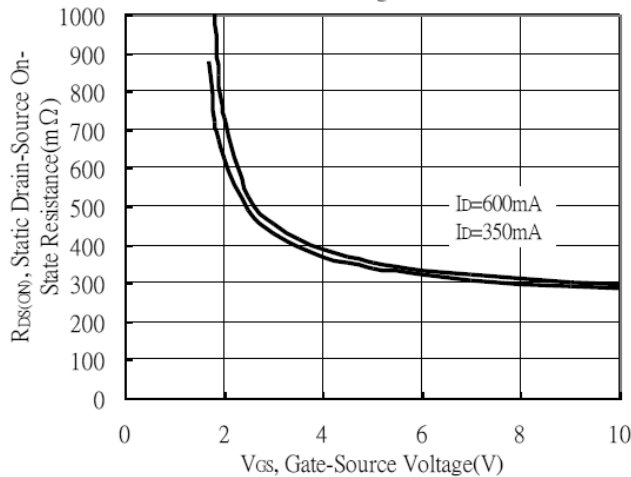
Static Drain-Source On-State resistance vs Drain Current



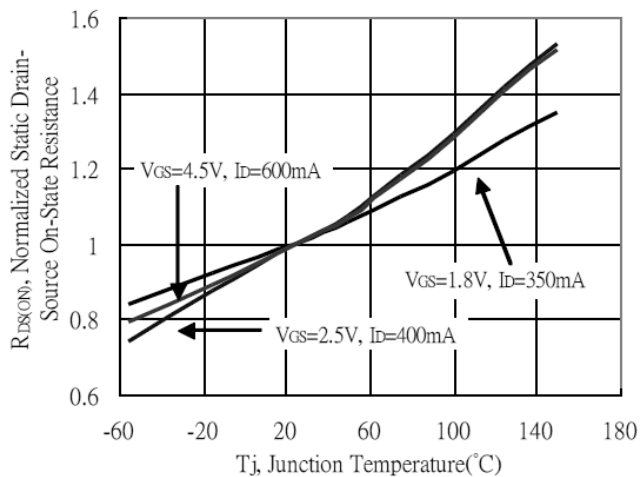
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

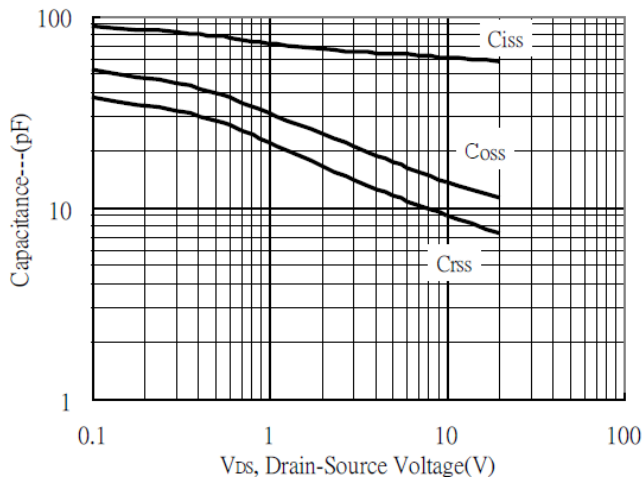


Drain-Source On-State Resistance vs Junction Temperature

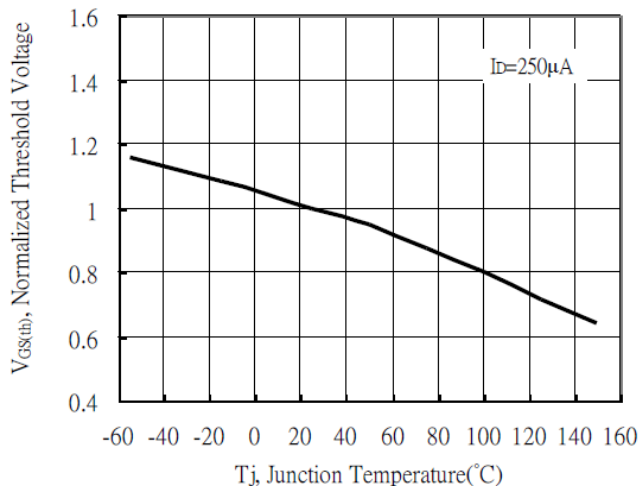


CHARACTERISTIC CURVES

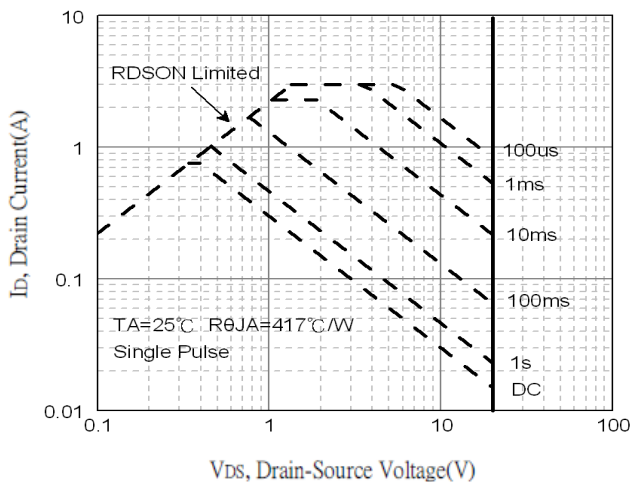
Capacitance vs Drain-to-Source Voltage



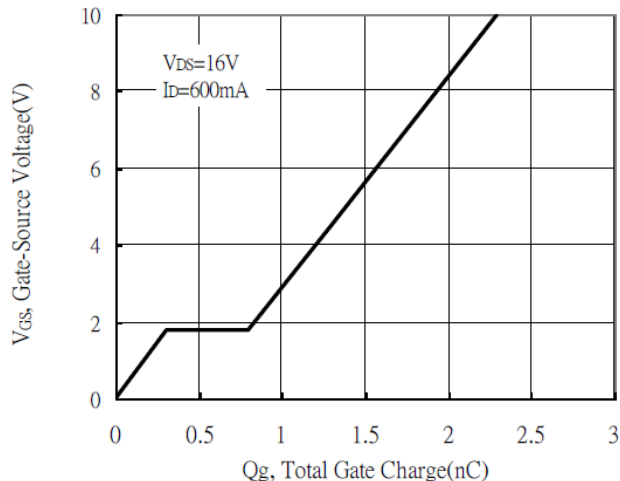
Threshold Voltage vs Junction Temperature



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves

