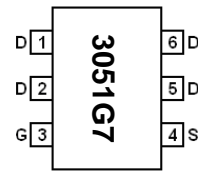
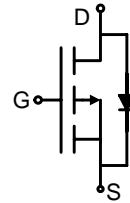


Main Product Characteristics:

V_{DSS}	-30V
$R_{DS(on)}$	45mohm(typ.)
I_D	-4A



SOT23-6


 Marking and pin
Assignment


Schematic diagram

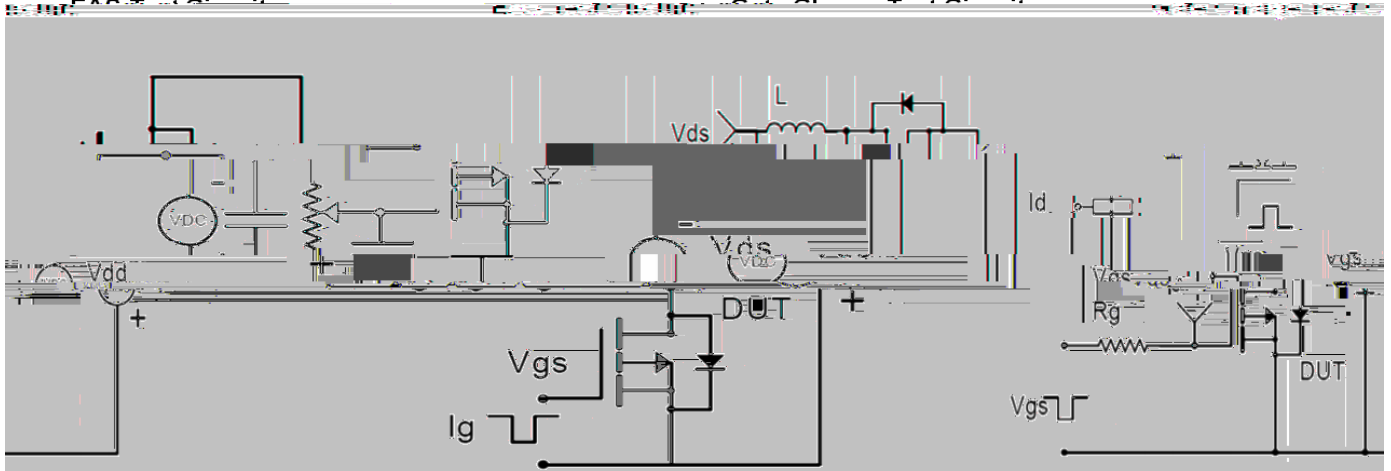
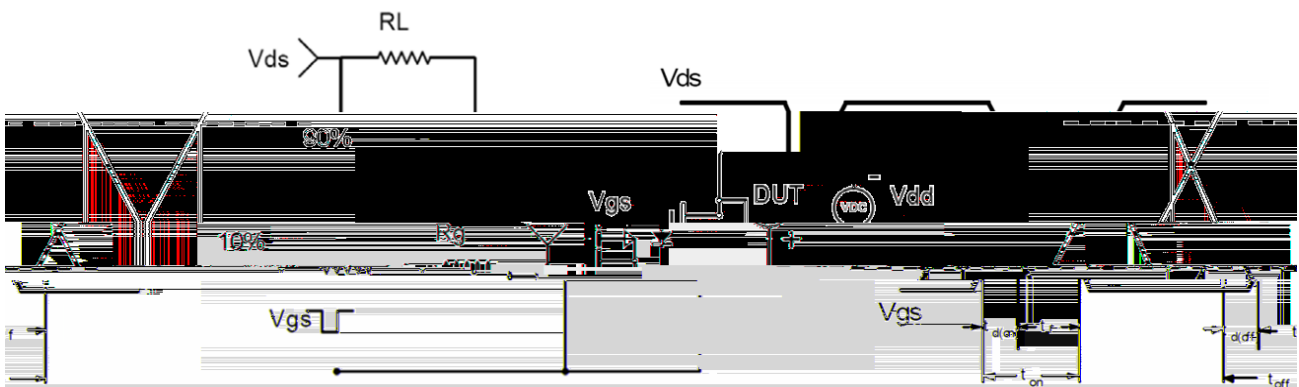
Features and Benefits:

>



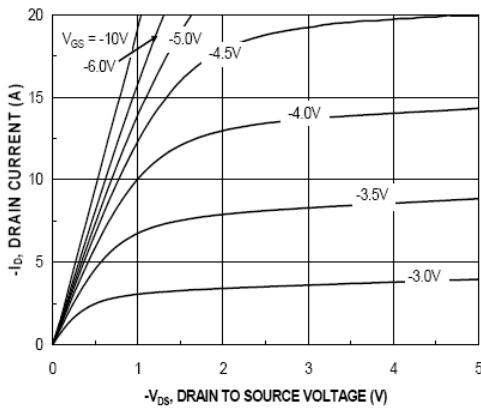
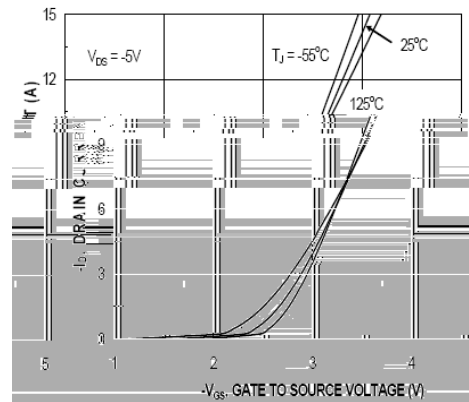
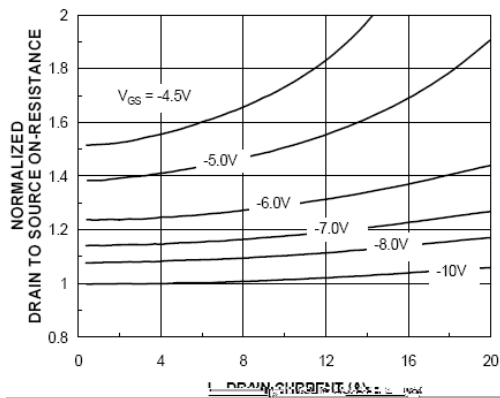
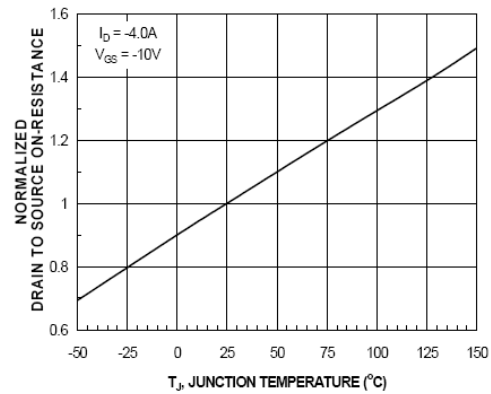
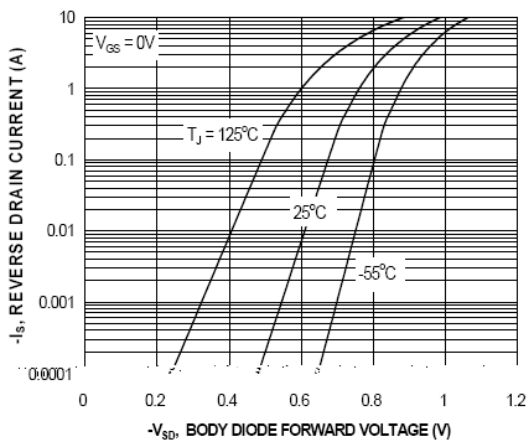
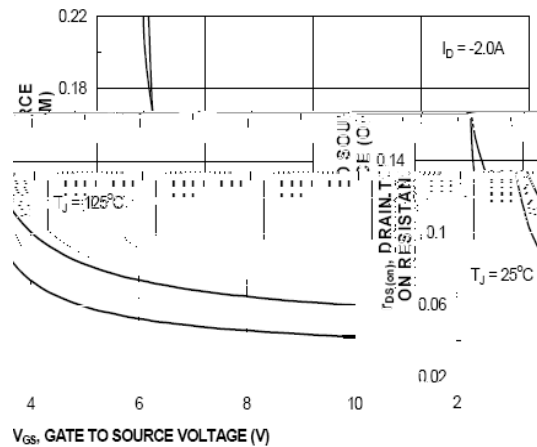
Electrical Characterizes @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 25V, V_{DS}=0V$			± 100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.6	-3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-4A$		45	51	m
		$V_{GS}=-4.5V, I_D=-3.4A$		65	85	m
Forward Transconductance	g_{FS}	$V_{DS}=-5V, I_D=-4A$		8.5		S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C_{ISS}	$V_{DS}=-15V, V_{GS}=0V,$ $F=1.0\text{MHz}$		520		PF
Output Capacitance	C_{OSS}			94		PF
Reverse Transfer Capacitance	C_{RSS}			73		PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-1A$ $V_{GS}=-10V, R_{GEN}=6$		8.9		nS
Turn-on Rise Time	t_r			4.0		nS
Turn-Off Delay Time	$t_{d(off)}$			22.6		nS
Turn-Off Fall Time	t_f			5.5		nS
Total Gate Charge	Q_g	$V_{DS}=-5V, I_D=-4A,$ $V_{GS}=-5V$		7.1		nC
Gate-Source Charge	Q_{gs}			0.86		nC
Gate-Drain Charge	Q_{gd}			3.9		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V_{SD}	$V_{GS}=0V, I_S=-1.3A$		-0.8	-1.2	V
Diode Forward Current (Note 2)	I_S				-4	A
Reverse Recovery Time	t_{rr}	$T_j=25^{\circ}\text{C}, I_F=-4A,$ $di/dt=-100A/\mu S$		10.3		nS
Reverse Recovery Charge	Q_{rr}			4.3		nC

Test Circuits and Waveforms

Switching Time Test Circuit:
Switching Waveforms:

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $300\mu\text{s}$, Duty Cycle 2% .
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics


Figure 1. Typical Output Characteristics

Figure 2. Transfer Characteristics

Figure 3. Drain-Source On-Resistance

Figure 4. Drain-Source On-Resistance

Figure 5. Source- Drain Diode Forward

Figure 6. R_{dson} vs V_{GS}

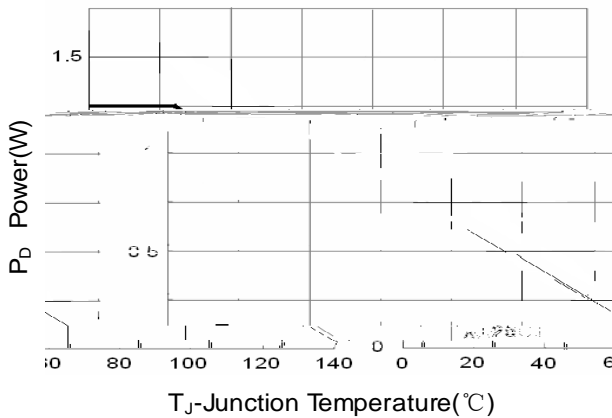


Figure 7. Power Dissipation

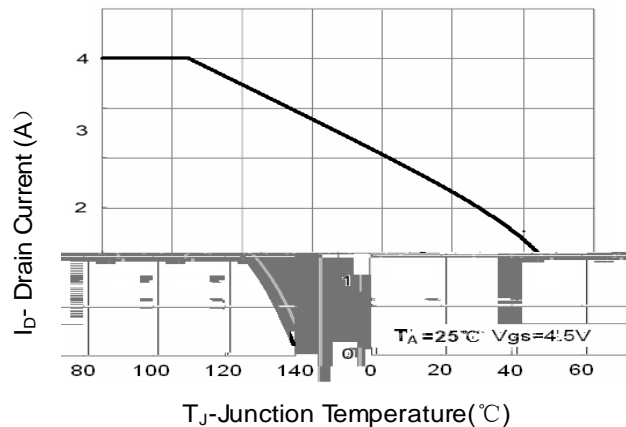


Figure 8. Drain Current

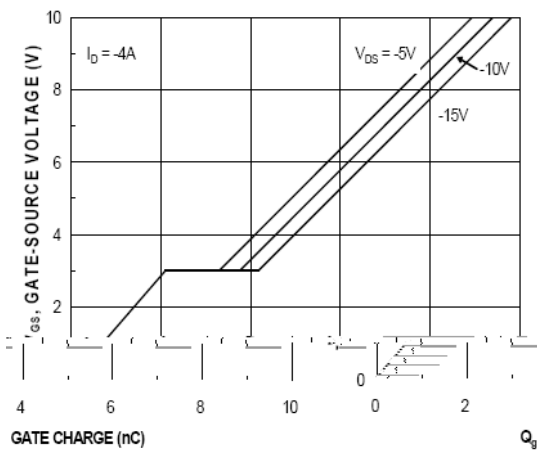


Figure 9. Gate Charge

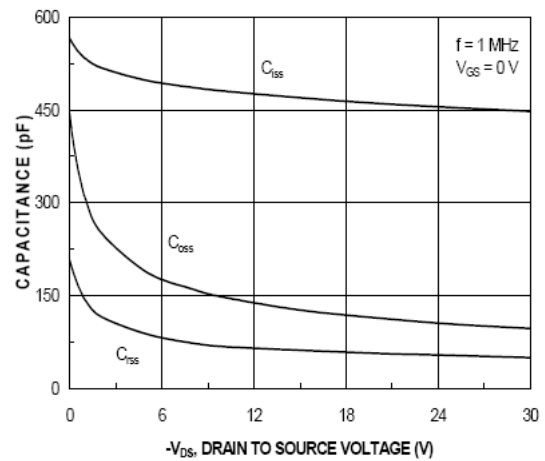


Figure 10. Capacitance vs Vds

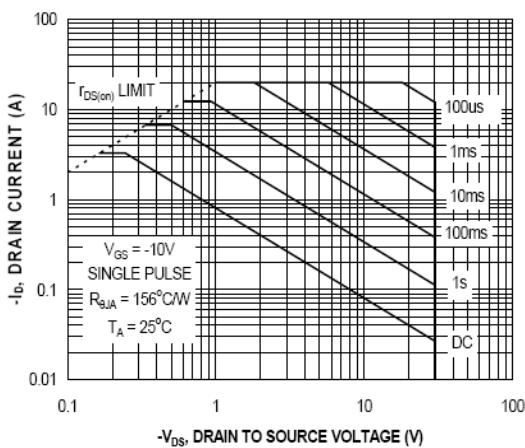


Figure 11. Safe Operation Area

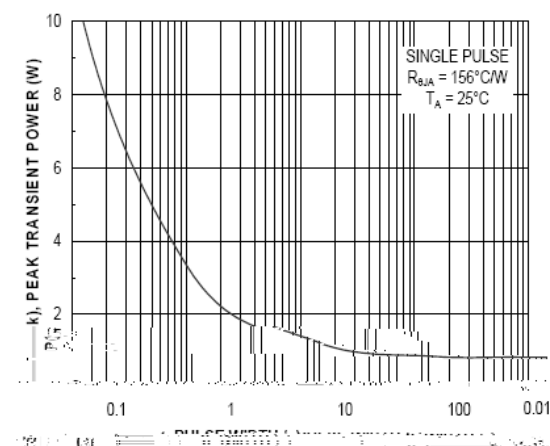


Figure 12. Single Pulse Maximum Power Dissipation

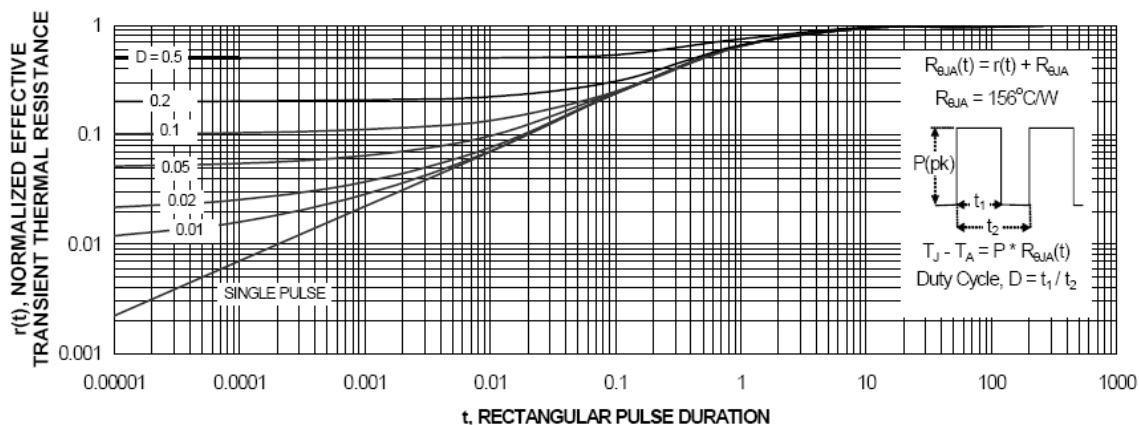
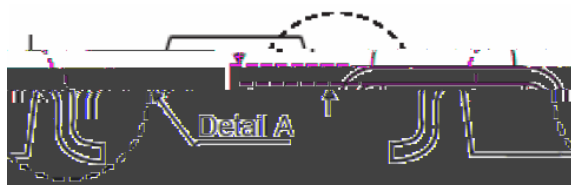
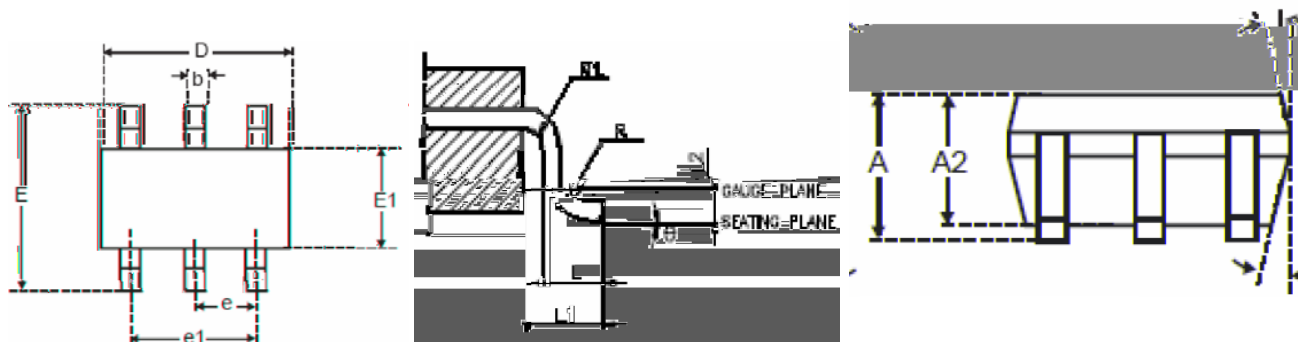


Figure 13. Normalized Maximum Transient Thermal Impedance

Mechanical Data:
SOT23-6 Dimensions in Millimeters (UNIT:mm)


SYMBOLS	MILLMETERS		
	MIN.	NOM.	MAX.
A			1.45
A1			0.15
A2	0.90	1.15	1.30
b	0.30		0.50
c	0.08		0.22
D	2.90 BSC.		
E	2.80 BSC.		
E1	1.60 BSC.		
	0.90 BSC.	0.65 BSC.	
	1.90 BSC.		
	0.30	0.45	0.60
	0.60 REF		
	0.25 BSC.		
	0.10		
	0.10		0.25
	0	4	8
	5	10	15

NOTES:

1. All dimensions are in millimeters.
2. Dimensions are inclusive of plating
3. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
4. Dimension L is measured in gauge plane.
5. Controlling dimension is millimeter, converted inch dimensions are not necessarily exact.



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