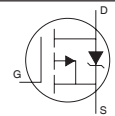


Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	-12	—	—	V	$V_{GS} = 0V$, $I_D = -250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	-0.006	—	V/ $^\circ\text{C}$	Reference to 25°C , $I_D = -1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	0.011	Ω	$V_{GS} = -4.5V$, $I_D = -10A$ ②
		—	—	0.015		$V_{GS} = -2.5V$, $I_D = -8.5A$ ②
		—	—	0.022		$V_{GS} = -1.8V$, $I_D = -7.0A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	-0.45	—	-1.2	V	$V_{DS} = V_{GS}$, $I_D = -250\mu A$
g_{fs}	Forward Transconductance	21	—	—	S	$V_{DS} = -10V$, $I_D = -10A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	1.0	μA	$V_{DS} = -12V$, $V_{GS} = 0V$
		—	—	-25		$V_{DS} = -9.6V$, $V_{GS} = 0V$, $T_J = 70^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	-100	nA	$V_{GS} = -8.0V$
	Gate-to-Source Reverse Leakage	—	—	100		$V_{GS} = 8.0V$
Q_g	Total Gate Charge	—	69	100	nC	$I_D = -8.0A$
Q_{gs}	Gate-to-Source Charge	—	9.1	14		$V_{DS} = -9.6V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	21	32		$V_{GS} = -4.5V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	19	—	ns	$V_{DD} = -6.0V$
t_r	Rise Time	—	20	—		$I_D = -1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	240	—		$R_D = 6.0\Omega$
t_f	Fall Time	—	220	—		$V_{GS} = -4.5V$ ②
C_{iss}	Input Capacitance	—	5050	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	1520	—		$V_{DS} = -10V$
C_{rss}	Reverse Transfer Capacitance	—	1120	—		$f = 1.0\text{MHz}$

Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	-1.5	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	-80		
V_{SD}	Diode Forward Voltage	—	—	-1.2	V	$T_J = 25^\circ\text{C}$, $I_S = -1.5A$, $V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	52	78	ns	$T_J = 25^\circ\text{C}$, $I_F = -1.5A$
Q_{rr}	Reverse Recovery Charge	—	53	80	nC	$di/dt = 100A/\mu s$ ②

Notes:

① Repetitive rating; pulse width limited by max. junction temperature.

② Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$.

③ When mounted on 1 inch square copper board, $t < 10$ sec

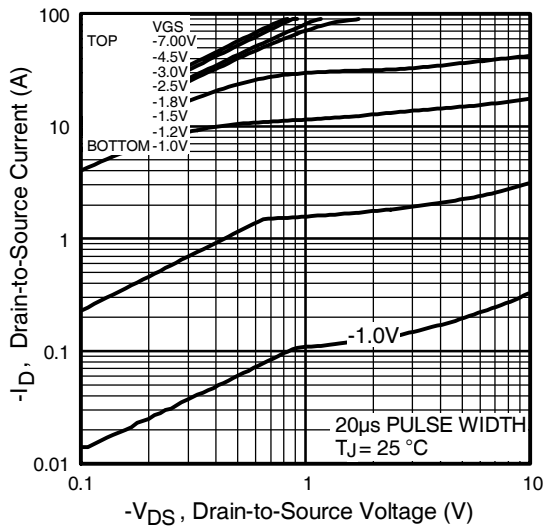


Fig 1. Typical Output Characteristics

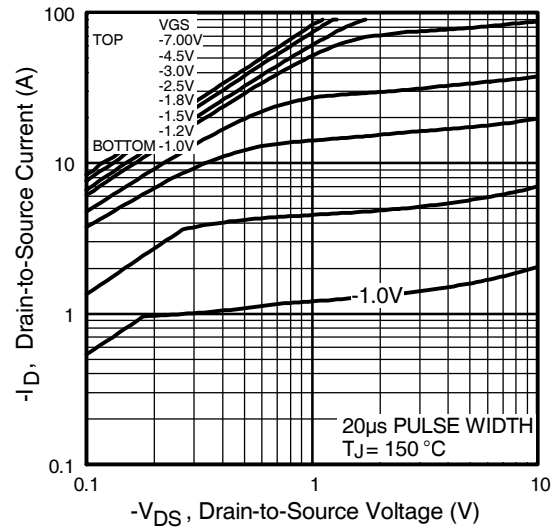


Fig 2. Typical Output Characteristics

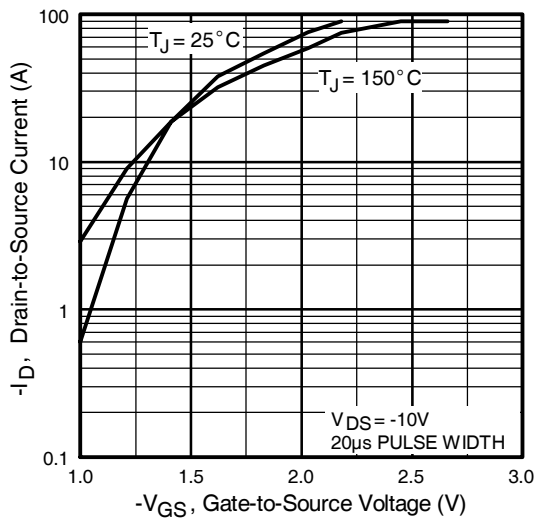


Fig 3. Typical Transfer Characteristics

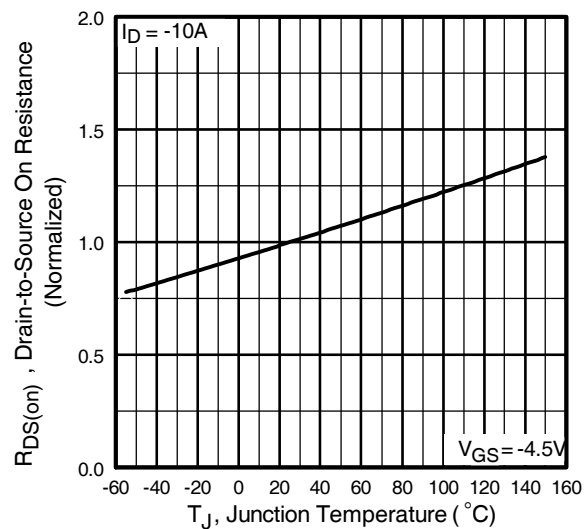


Fig 4. Normalized On-Resistance
Vs. Temperature

IRF7701PbF

International
IR Rectifier

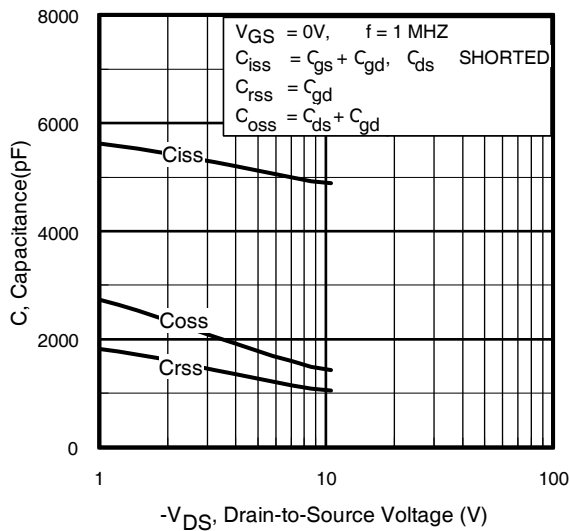


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

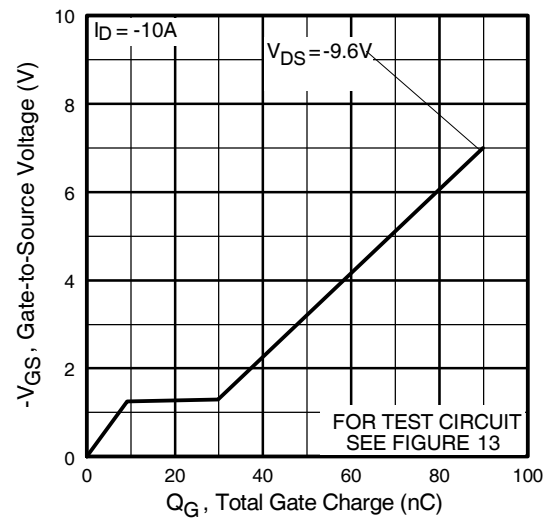


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

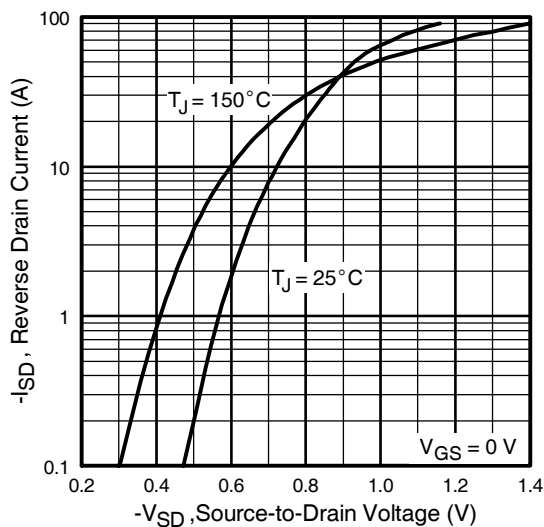


Fig 7. Typical Source-Drain Diode Forward Voltage

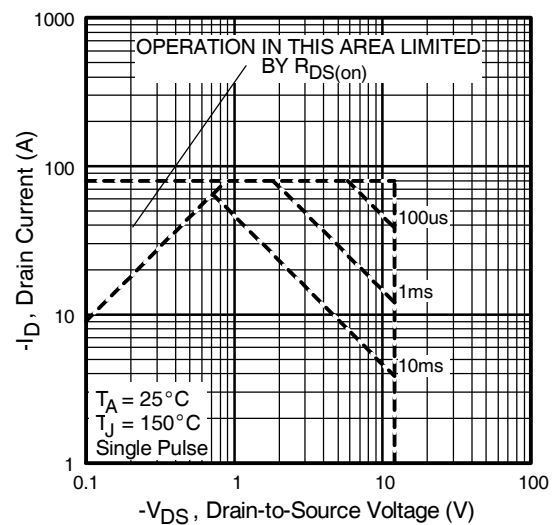


Fig 8. Maximum Safe Operating Area

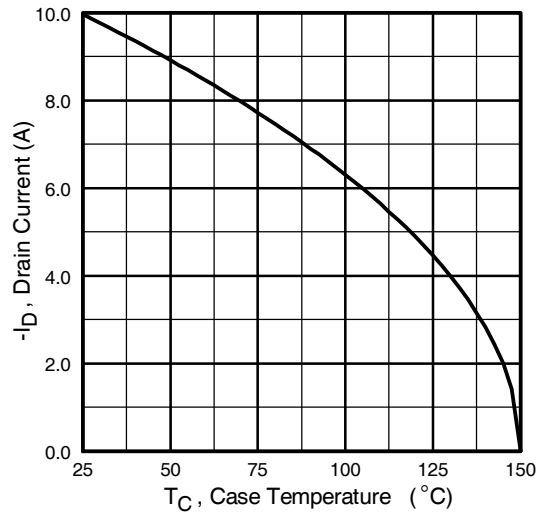


Fig 9. Maximum Drain Current Vs. Case Temperature

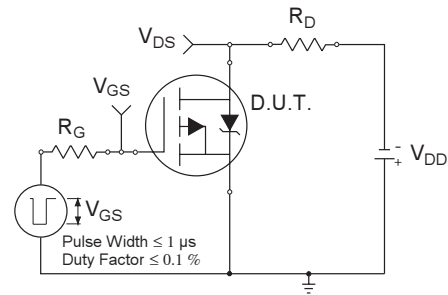


Fig 10a. Switching Time Test Circuit

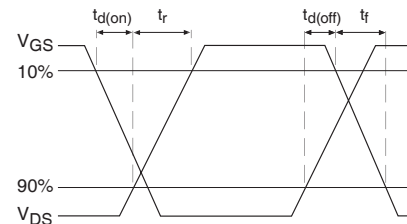


Fig 10b. Switching Time Waveforms

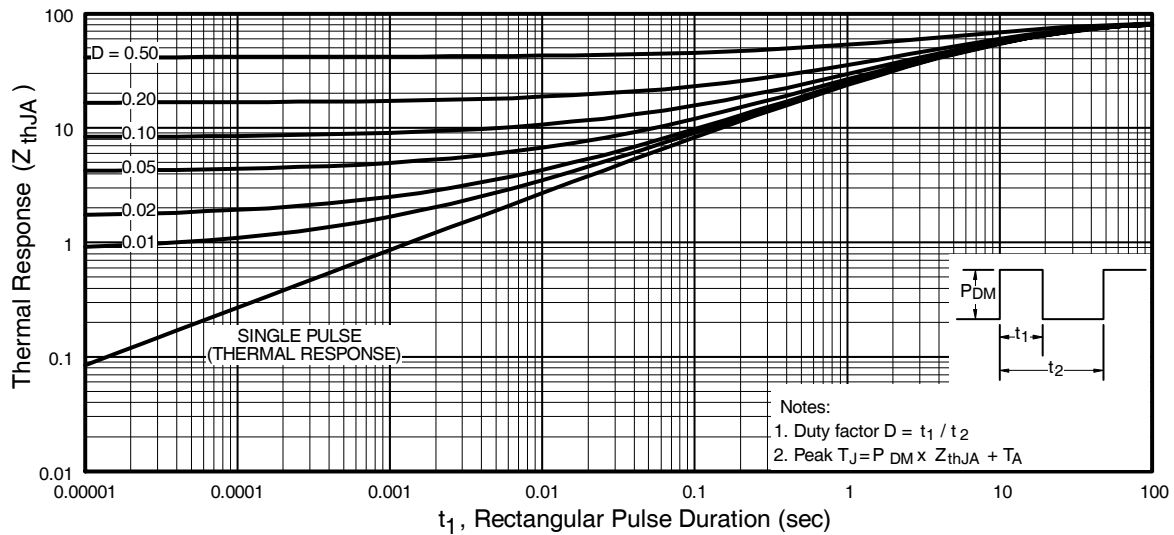


Fig 10. Typical Effective Transient Thermal Impedance, Junction-to-Ambient

IRF7701PbF

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IR Rectifier

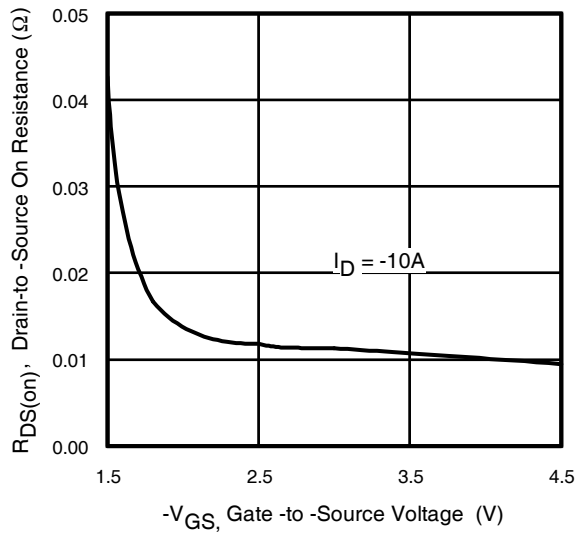


Fig 11. Typical On-Resistance Vs. Gate Voltage

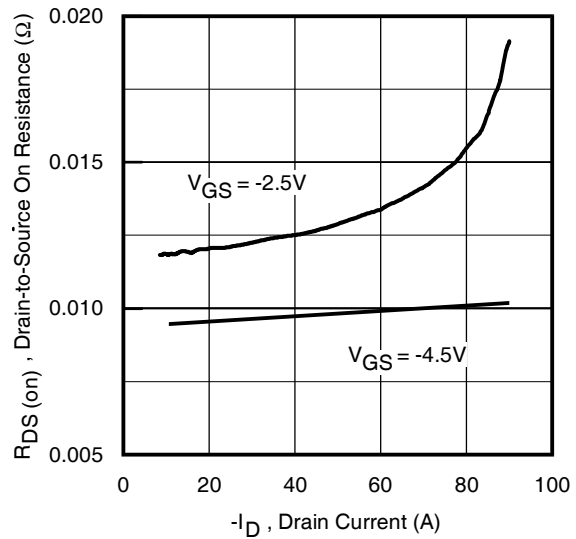


Fig 12. Typical On-Resistance Vs. Drain Current

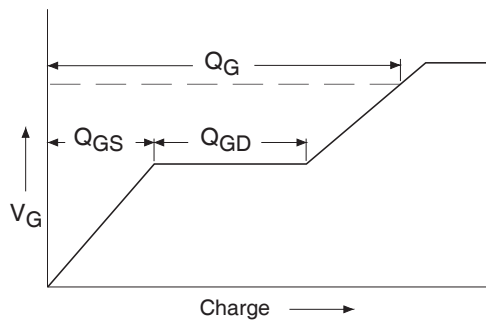


Fig 13a. Basic Gate Charge Waveform

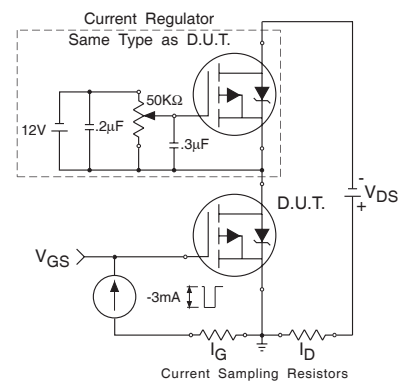


Fig 13b. Gate Charge Test Circuit

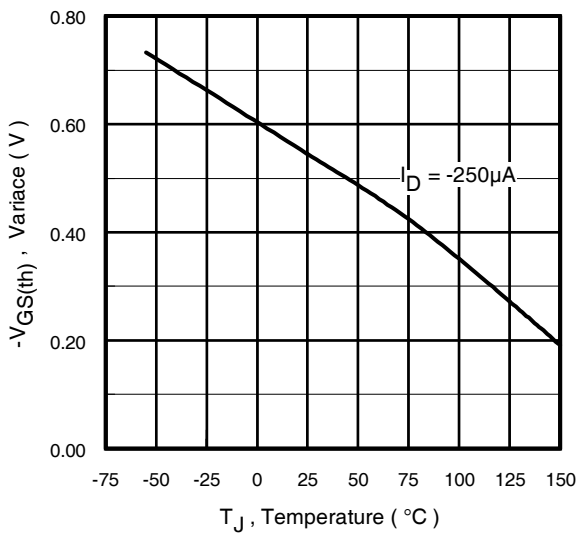


Fig 14. Threshold Voltage Vs. Temperature

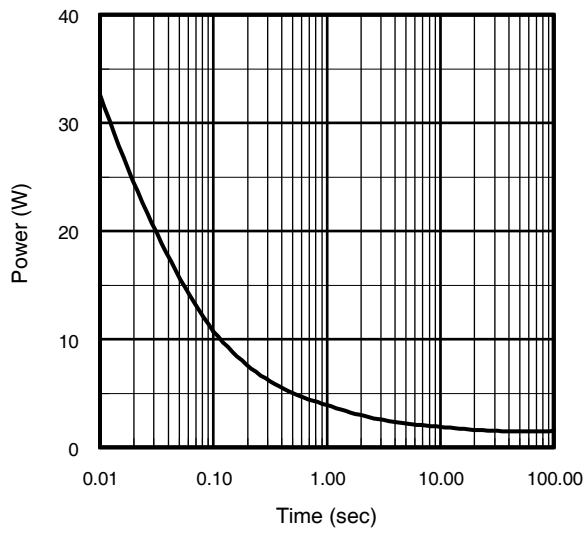


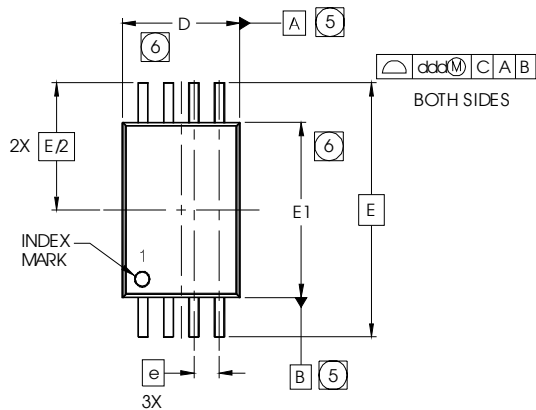
Fig 15. Typical Power Vs. Time

IRF7701PbF

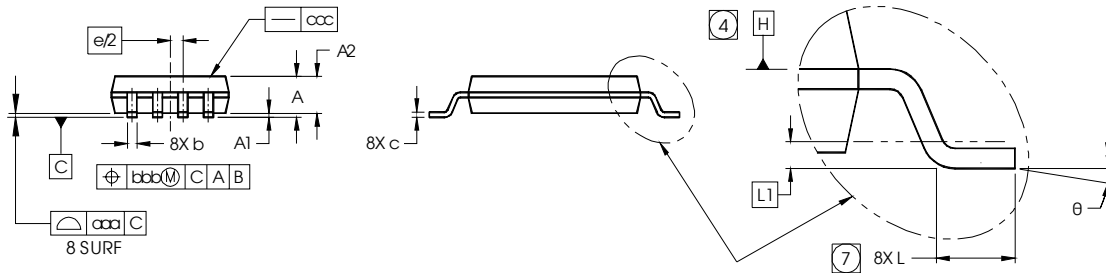
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TSSOP8 Package Outline

Dimensions are shown in millimeters (inches)

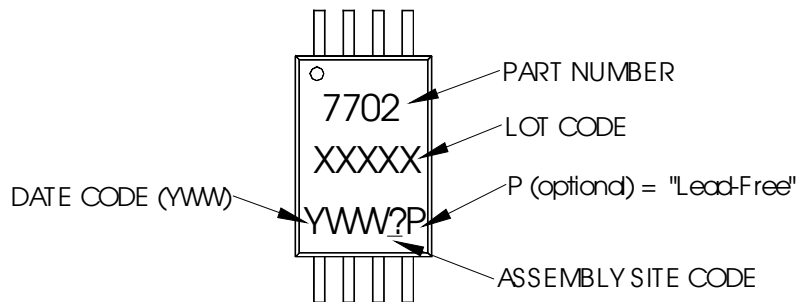


SYMBOL	MO-153AA DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	---	---	1.20	---	---	.0472
A1	0.05	---	0.15	.0020	---	.0059
A2	0.80	1.00	1.05	.032	.039	.041
b	0.19	---	0.30	.0075	---	.0118
c	0.09	---	0.20	.0036	---	.0078
D	2.90	3.00	3.10	.115	.118	.122
E	6.40 BSC			.251 BSC		
E1	4.30	4.40	4.50	.170	.173	.177
e	0.65 BSC			.0256		
L	0.45	0.60	0.75	.0178	.0236	.0290
L1	0.25 BSC			.010 BSC		
θ	0°	---	8°	0°	---	8°
aaa	0.10			.0039		
bbb	0.10			.0039		
ccc	0.05			.0019		
ddd	0.20			.0078		

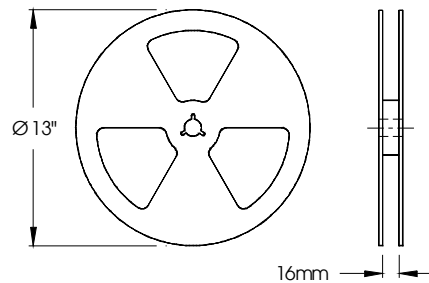
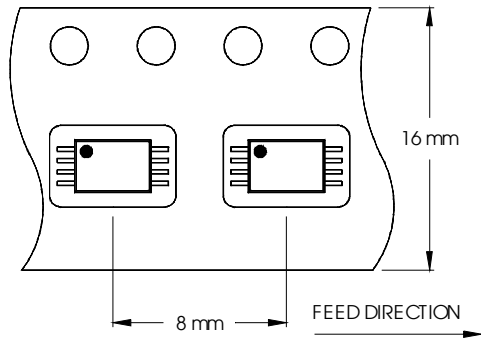


TSSOP8 Part Marking Information

EXAMPLE: THIS IS AN IRF7702



TSSOP-8 Tape and Reel Information



NOTES:

1. TAPE & REEL OUTLINE CONFORMS TO EIA-481 & EIA-541.

Data and specifications subject to change without notice.
This product has been designed and qualified for the Consumer market.
Qualification Standards can be found on IR's Web site.

International
IR Rectifier

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TAC Fax: (310) 252-7903

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