



SOT-26



Pin Definition:

- | | |
|----------|-----------|
| 1. Drain | 6. Drain |
| 2. Drain | 5. Drain |
| 3. Gate | 4. Source |

Key Parameter Performance

Parameter	Value	Unit
V_{DS}	-30	V
$R_{DS(on)}$ (max)	$V_{GS} = -10V$	60
	$V_{GS} = -4.5V$	100
Q_g	9.52	nC

Features

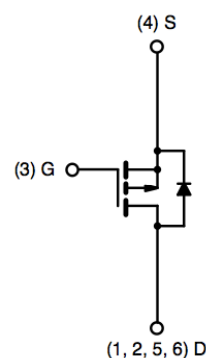
- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

Ordering Information

Part No.	Package	Packing
TSM3457CX6 RFG	SOT-26	3kpcs / 7" Reel

Note: "G" denotes for Halogen- and Antimony-free as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds

Block Diagram



P-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-5	A
Pulsed Drain Current	I_{DM}	-20	A
Continuous Source Current (Diode Conduction) ^(Note 1,2)	I_S	-1.7	A
Maximum Power Dissipation	P_D	$T_A = 25^\circ C$	2.0
		$T_A = 70^\circ C$	1.3
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	- 55 to +150	$^\circ C$

Thermal Performance

Parameter	Symbol	Limit	Unit
Junction to Case Thermal Resistance	$R_{\theta JC}$	30	$^\circ C/W$
Junction to Ambient Thermal Resistance (PCB mounted)	$R_{\theta JA}$	80	$^\circ C/W$

Electrical Specifications (T_A = 25°C unless otherwise noted)

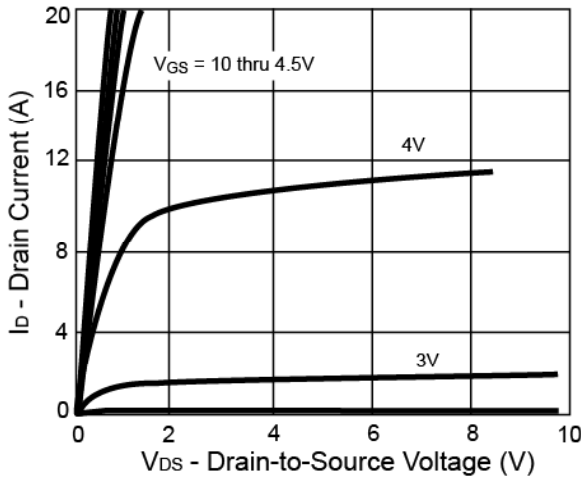
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static (Note 3)						
Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = -250μA	BV _{DSS}	-30	--	--	V
Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	V _{GS(TH)}	-1.0	-1.5	-3.0	V
Gate Body Leakage	V _{GS} = ±20V, V _{DS} = 0V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} = 0V	I _{DSS}	--	--	-1.0	μA
On-State Drain Current	V _{DS} = -5V, V _{GS} = -10V	I _{D(ON)}	-20	--	--	A
Drain-Source On-State Resistance	V _{GS} = -4.5V, I _D = -3.7A	R _{DS(ON)}	--	82	100	mΩ
	V _{GS} = -10V, I _D = -5A		--	50	60	
Forward Transconductance	V _{DS} = -15V, I _D = -5A	g _{fs}	--	10	--	S
Diode Forward Voltage	I _S = -1.7A, V _{GS} = 0V	V _{SD}	--	-0.8	-1.2	V
Dynamic (Note 4,5)						
Total Gate Charge	V _{DS} = -15V, I _D = -3.7A, V _{GS} = -10V	Q _g	--	9.52	--	nC
Gate-Source Charge		Q _{gs}	--	3.43	--	
Gate-Drain Charge		Q _{gd}	--	1.71	--	
Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz	C _{iss}	--	551.57	--	pF
Output Capacitance		C _{oss}	--	90.96	--	
Reverse Transfer Capacitance		C _{rss}	--	60.79	--	
Switching (Note 4,5)						
Turn-On Delay Time	V _{DD} = -15V, R _L = 15Ω, I _D = -1A, V _{GEN} = -10V, R _G = 6Ω	t _{d(on)}	--	10.8	--	ns
Turn-On Rise Time		t _r	--	2.33	--	
Turn-Off Delay Time		t _{d(off)}	--	22.53	--	
Turn-Off Fall Time		t _f	--	3.87	--	

Notes:

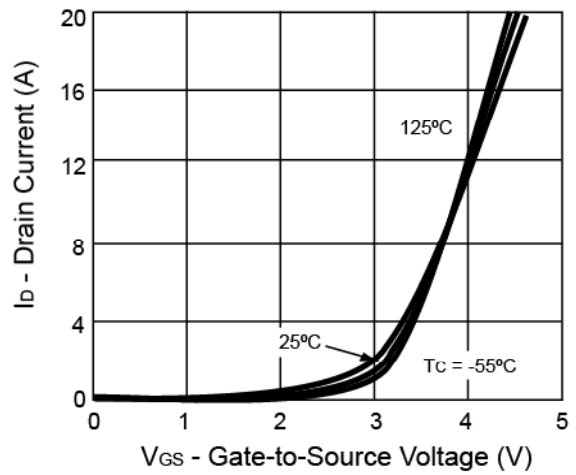
1. Pulse width limited by the Maximum junction temperature
2. Surface Mounted on FR4 Board, t ≤ 5 sec.
3. pulse test: PW ≤ 300μS, duty cycle ≤ 2%
4. For DESIGN AID ONLY, not subject to production testing.
5. Switching time is essentially independent of operating temperature.

Electrical Characteristics Curves

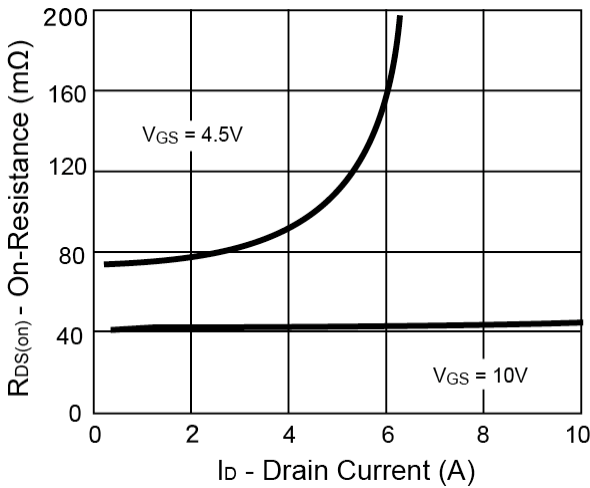
Output Characteristics



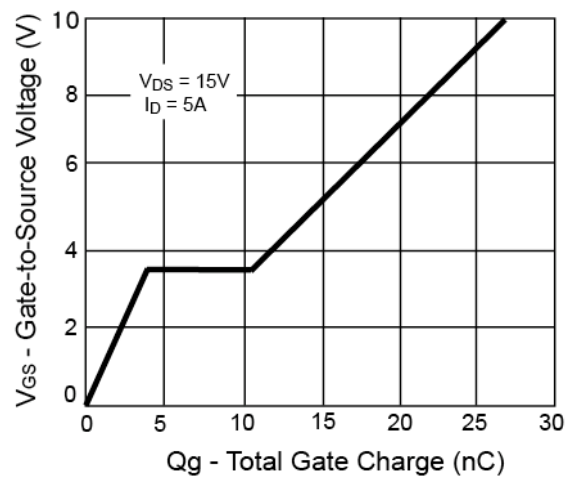
Transfer Characteristics



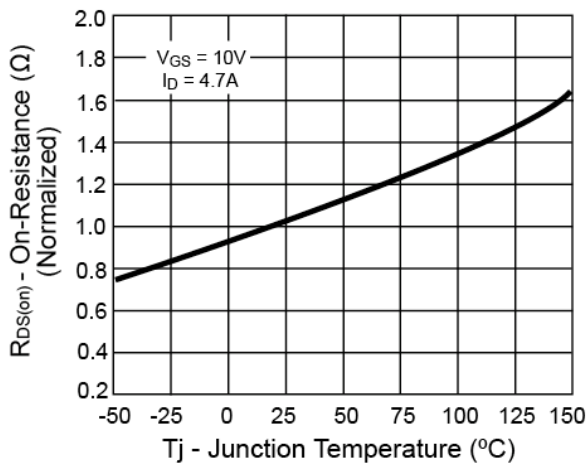
On-Resistance vs. Drain Current



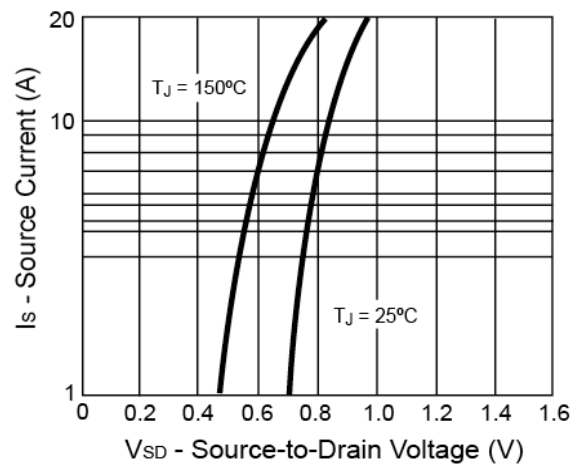
Gate Charge



On-Resistance vs. Junction Temperature

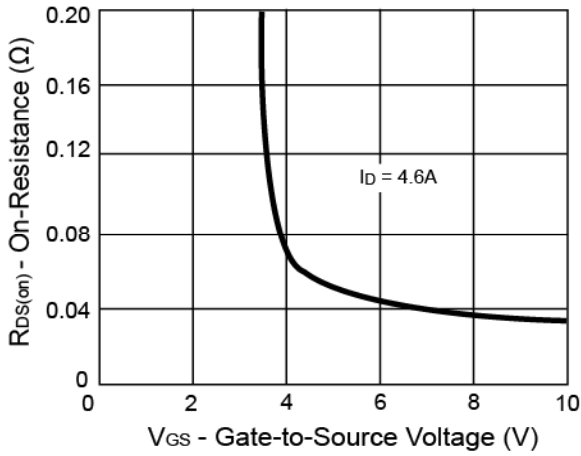


Source-Drain Diode Forward Voltage

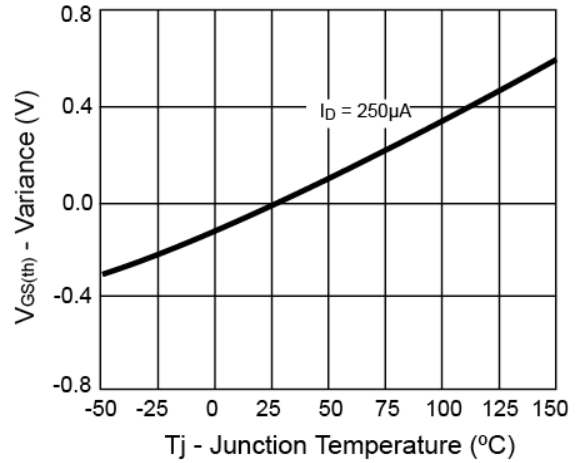


Electrical Characteristics Curves

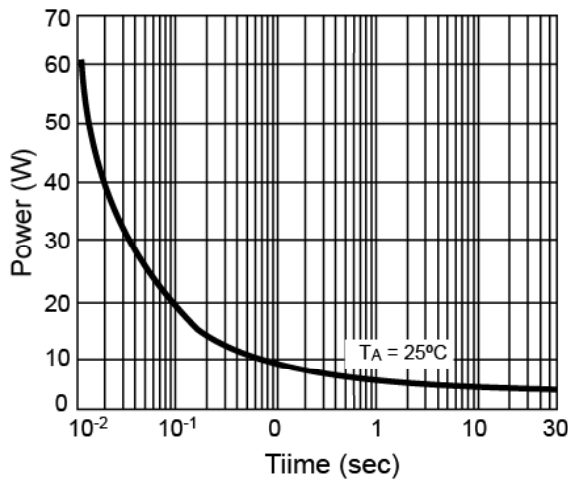
On-Resistance vs. Gate-Source Voltage



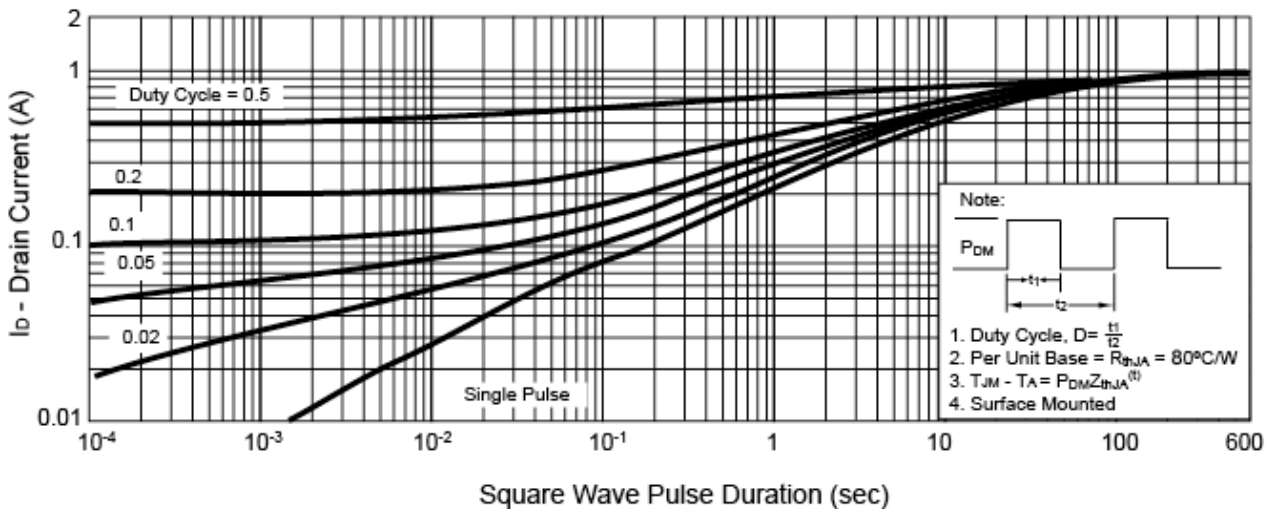
Threshold Voltage



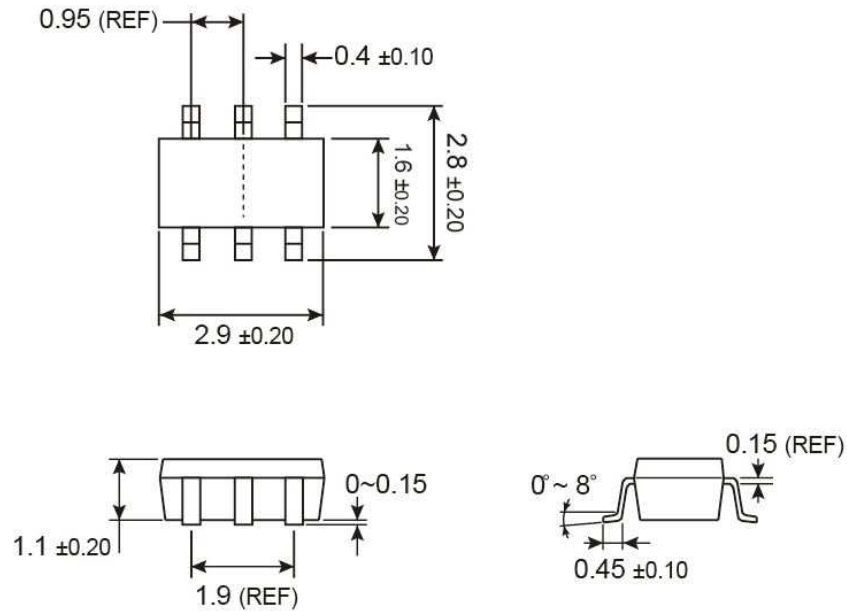
Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient

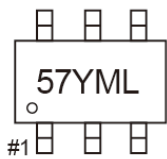


SOT-26 Mechanical Drawing



Unit: Millimeters

Marking Diagram



- 57** = Device Code
- Y** = Year Code
- M** = Month Code for Halogen Free Product
 - O** =Jan **P** =Feb **Q** =Mar **R** =Apr
 - S** =May **T** =Jun **U** =Jul **V** =Aug
 - W** =Sep **X** =Oct **Y** =Nov **Z** =Dec
- L** = Lot Code

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